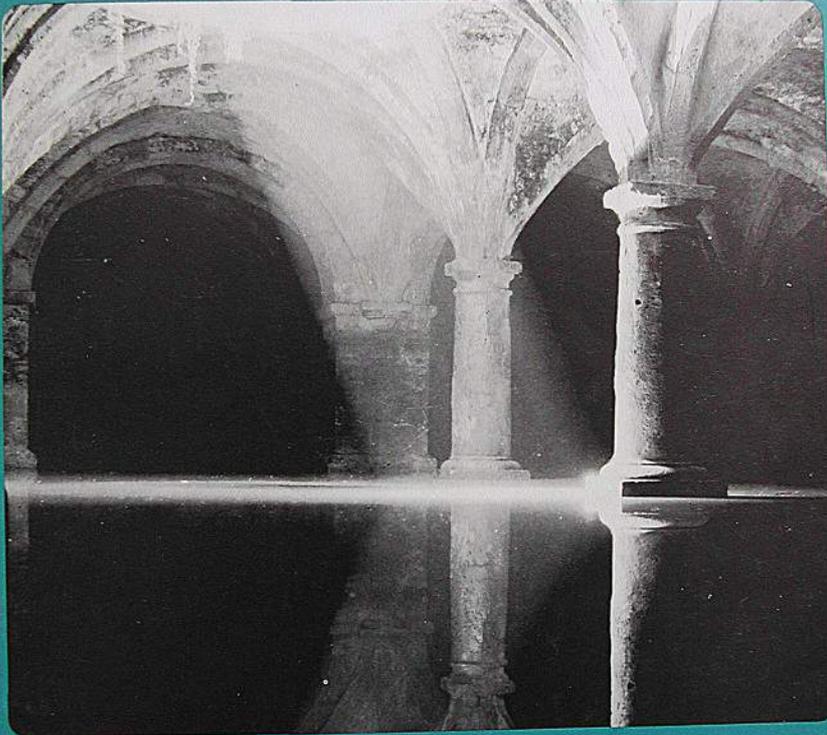


INTERNATIONAL
TRANSNATIONAL
ASSOCIATIONS

ASSOCIATIONS
TRANSNATIONALES
INTERNATIONALES



1978 - 5



TRANSNATIONAL ASSOCIATIONS

ASSOCIATIONS TRANSNATIONALES

UIA's periodical celebrates its 30th anniversary in 1978, having changed its name from « International Associations » to « Transnational Associations » in 1977, in order to reflect the transnational nature of nonprofit associations (INGOs) by using more appropriate terminology. Our informed readers will have appreciated our intention to give a good example of conceptual clarity.

The purpose of « Transnational Associations » is to present significant contributions to understanding about the structure and functioning of the complex network of international organizations. The main concern is to focus attention on the roles and problems of the wide variety of transnational associations (NGOs : international nongovernmental, nonprofit organizations) in the international community. In this sense « Transnational Associations » is the periodical of transnational associations and those interested in them. It therefore includes news, studies, statistics, activity and meeting information, as well as articles. The articles range from descriptions of individual organizations to academic investigation of groups of organizations and their problems. The focus of the selected articles is less on the substantive world problems on which they may act (which are extensively examined in other periodicals) and more on the present methods of international action and future alternatives which can usefully be envisaged and discussed. Related themes regularly treated are : relationship of NGOs to intergovernmental organizations, techniques of meeting organization, international information systems, multinational enterprises.

The readership therefore includes : international association executives, intergovernmental organization executives, scholars of the sociology of international action, organizers of international meetings, commercial organizations offering services to international bodies, and others interested in the activities of the whole range of international organizations.

" Transnational Associations » is the organ of the nonprofit Union of International Associations, although the views expressed are not necessarily those of the UIA.

En 1978 la revue entre dans sa 30e année. L'année 1977 a vu le changement de titre de notre Revue « Associations Transnationales » au lieu d' " Associations internationales ".

Le fait transnational des associations non lucratives (OING) le voulant ainsi, nos lecteurs n'ont pas été surpris que nous donnions le bon exemple d'un langage clair.

La raison principale d'« Associations Transnationales » est d'apporter sa contribution à la vie et au développement du réseau complexe des associations, dans ses structures comme dans son fonctionnement.

Le premier souci d'« Associations Transnationales » est de fixer l'attention sur les tâches et les problèmes d'un large éventail d'associations transnationales sans but lucratif — les organisations dites non-gouvernementales dans la terminologie des Nations Unies. En ce sens « Associations Transnationales » est la tribune des associations transnationales et de tous ceux qui s'y intéressent. Cette revue mensuelle contient des nouvelles, des études, des statistiques, des informations spécifiques sur les activités des associations, leurs congrès, leurs réunions. Aussi des articles, des chroniques ayant trait aux problèmes et aux intérêts communs aux associations.

Le sujet des articles choisis s'attache surtout à la méthode de l'organisation internationale considérée notamment dans ses rapports avec le secteur privé des associations et dans la perspective des adaptations nécessaires aux temps nouveaux, plutôt qu'au fond des problèmes, qui sont le propre de chaque groupement et traités ailleurs dans des revues générales ou spécialisées.

Nos thèmes habituels sont les relations des ONG avec les organisations intergouvernementales, les techniques de l'organisation internationale, les systèmes d'information internationale, outre les entreprises multinationales.

« Associations Transnationales » est l'organe de l'UIA, association sans but lucratif, bien que les opinions qu'il exprime ne soient pas nécessairement celles de cet Institut.

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TRANSNATIONAL ASSOCIATIONS

ASSOCIATIONS TRANSNATIONALES

(former title : INTERNATIONAL ASSOCIATIONS)

(ancien titre : ASSOCIATIONS INTERNATIONALES)

30th year
année

1978 - n° 5

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Editorial



LE FAIT ONG ET LE SYSTEME ONU

Sous le titre intentionnel " L'ONU, l'affaire de tous », M. Eric Suy, Secrétaire général adjoint et Conseiller juridique de l'Organisation des Nations-Unies, lors d'une récente conférence à l'Université de Louvain-la-Neuve, a fait réflexion sur l'expérience de ses hautes fonctions au long de ces cinq dernières années qui ont été marquées par les - orientations de la coopération internationale aux fins d'un nouvel ordre fondé sur le Développement. Jugement porté par un témoin réaliste sur une institution mondiale que l'opinion courante prend encore trop volontiers pour ce qu'elle n'est pas : un super-pouvoir armé de moyens contraignants, alors qu'elle ne peut agir en toutes choses, sécurité ou progrès, que du consentement et de la volonté de ses Etats membres. Cela, en un temps et dans un univers où la réalité politique demeure un assemblage de souverainetés jalouses de leur indépendance au point qu'on est en droit de s'inquiéter d'un retour offensif des nationalismes et d'une régression du droit international public entendu comme l'ensemble des règles qui régissent ou devraient régir les relations internationales.

Etrange persistance en vérité, survivance paradoxale d'une mentalité de compartiments réservés, alors que le train de l'humanité devrait être à couloirs tout grands ouverts à une circulation transnationale, du fait d'une interdépendance, partout éprouvée déjà comme une loi de solidarité globale.

Sujet assombri d'inquiétude dans l'imédiat, mais éclairé d'espérance raisonnable à plus long terme, étant donné ce qu'on pourrait appeler la dynamique de l'interdépendance, une dynamique dont se prévaut précisément le contrat de solidarité proposé par Albert Tévoédjré, Directeur de l'Institut International d'Etudes Sociales du BIT, et repris en conclusion de son livre fort remarqué dont nous aurons à parler :
- La pauvreté richesse des peuples »

Le fameux impératif catégorique de Kant vient ici à l'esprit : « Agis toujours d'après une maxime telle que tu puisses vouloir en même temps qu'elle de-

vienne une loi universelle » et sa formule : « Il faut parce qu'il faut ». Il faut une paix « juste et durable », il faut un ordre mondial faisant à chaque peuple sa part, il faut une organisation internationale respectable et efficace, parce qu'il faut vivre en communauté universelle. En prend-on le bon chemin ?

La coopération internationale commencée avec le siècle, au temps de la prépondérance européenne et des empires d'outre-mer il est vrai, organisée dans sa première forme par la Société des Nations, le BIT et la Commission de coopération intellectuelle, élargie et universalisée de nos jours par le Système des Nations-Unies, a jeté l'ébauche d'une société ouverte des peuples, avec un succès appréciable qui tient pour une bonne part à ce que l'éventail des institutions spécialisées s'est en général tenu à distance de l'idéologie politique et à ce que la coopération a pris appui sur le réseau transnational des ONG, on ne le sait pas assez en général, par carence d'information. Mais la fonction internationale, elle, le sait bien, d'expérience quotidienne dans l'exécution de ses programmes.

M. Suy pour sa part a dit d'un ton convaincu l'importance de l'art. 71 de la Charte et de la contribution des ONG, en citant opportunément le cas de l'intervention du représentant de la Fédération des Associations des pilotes de ligne qui a déterminé l'Assemblée générale à mettre à son ordre du jour la sécurité de l'aviation civile internationale menacée par le terrorisme.

En témoignage de cet intérêt de la fonction internationale pour les ONG, on se référera à l'allocution largement distribuée que M. M'bow, Directeur Général de l'Unesco, a prononcée l'hiver dernier à l'ouverture de la seizième conférence des ONG, à l'invitation de son président M. Malempré; un document

que nous avons versé de bon cœur à notre dossier, d'autant plus qu'il a le grand mérite d'étendre le concept étroitement économique du Développement à des valeurs humaines et sociales qui ne peuvent être assumées, selon lui et nous le pensons aussi, que par les peuples eux-mêmes encadrés par le réseau des associations non-gouvernementales. A l'Unesco, comme à l'ONU, l'autorité administrative tient pour essentielle la participation à ses œuvres des milieux intellectuels, scientifiques, culturels du monde entier. Somme toute « l'affaire de tous ».

Et pourtant l'orientation donnée au nouvel ordre « économique » mondial, qui fait du « Développement » une affaire d'Etats souverains en quête de croissance et la restructuration envisagée de l'ONU dans ce sens, ne risquent-elles pas de compromettre cette participation nécessaire des forces associatives non-gouvernementales ? On doit malheureusement se poser la question, et nous l'avons posée à notre interlocuteur-conférencier lors du débat qui a suivi son exposé. La réponse fit franchement le départ entre l'action associative spécialisée, qui ne gêne pas les Etats, et l'action associative des forces d'opinion, des groupes de pression, notamment dans le domaine des Droits de l'Homme, contre quoi beaucoup d'Etats se cabrent.

Nous avons déjà fait écho de la session de janvier du Comité des ONG de l'Ecosoc qui a fait apparaître cette ligne de partage en refusant le droit de critique à l'égard des gouvernements. Le rapport du Comité est soumis à la session de l'Ecosoc au moment où nous écrivons ces lignes. Les Etats vont devoir se découvrir et se prononcer sur des changements à la procédure de consultation qui pourraient comporter la suppression du Comité des ONG. Nos lecteurs savent ce que nous pensons

de la dégradation de ce Comité. Mais l'intention des Etats importe ici plus que le sort du Comité.

Un observateur attentif de la consultation nous disait dernièrement que si la Charte des Nations-Unies était à refaire, il n'est pas sûr que l'art. 71 y trouverait encore place. Faute d'une révision de la Charte qui prévoit, en son article 109, que toute modification exigera la ratification de tous les membres permanents du Conseil de sécurité, le Conseil économique et social sera tenté, dans sa majorité, de procéder par

la bande, de l'intérieur, en réduisant la consultation à des tâches politiquement inoffensives ou de complaisance ou encore au simple rôle de diffuseur de recommandations des Etats.

On en lira les textes ci-après.

Les réponses de la France et de l'Autriche concernant l'application par les ONG des principes régissant leur statut, objectent à cette tendance contraire aux buts et aux principes de la Charte.

Faut-il dire que le dommage serait pour l'avenir de l'organisation internationale

beaucoup plus que pour les ONG écartées qui y trouveraient un avantage publicitaire et un accroissement d'attention ? Car le lait associatif non-gouvernemental existe en soi et non par la grâce du statut consultatif. On doit savoir que les ONG, associations indépendantes, qui se sont vouées à la protection des droits humains n'attendent pas l'autorisation des Etats pour se manifester à travers les frontières et que le sixième continent non territorial cher à Johan Galtung n'a besoin ni d'agrément ni de passeports.

Robert FENAUX

Le statut consultatif et les droits de l'homme

Les réponses de la France et de l'Autriche à l'enquête de l'Ecosoc sur l'application par les ONG des principes régissant leur statut.

AUTRICHE

L'Autriche fait grand cas du rôle des organisations non gouvernementales dans le domaine des droits de l'homme. Le statut consultatif qui peut leur être accordé en vertu de la résolution 1296 (XLIV) du Conseil économique et social est donc envisagé comme très important pour les travaux de ces organisations et pour la protection et la promotion des droits de l'homme en général. Comme il est dit au paragraphe 17 de ladite résolution, une attention particulière sera accordée aux demandes émanant d'organisations qui, ayant des activités dans le domaine des droits de l'homme, ont pour but avant tout de combattre le colonialisme, l'apartheid, l'intolérance raciale et autres violations manifestes des droits de l'homme et des libertés fondamentales.

Il semble évident que les activités de ces organisations doivent être conformes à l'esprit, aux buts et aux principes de la Charte des Nations Unies et en particulier aux règles édictées pour l'accomplissement de leur tâche dans les décisions et résolutions pertinentes des organes de l'Organisation des Nations Unies. Il est impossible de considérer qu'une organisation non gouvernementale contrevient à ces règles du seul fait qu'elle exprime sa préoccupation à propos de violations des droits de l'homme — où que celles-ci soient censées s'être produites, si l'organisation parvient à cette conclusion à partir des renseignements appropriés dont elle dispose. Le Gouvernement autrichien n'a eu connaissance d'aucun fait qui pourrait indiquer que des organisations non gouvernementales n'aient pas respecté les règles susdites, et notamment les dispositions du paragraphe 8 de la résolution 1503 (XLVIII) du Conseil économique et social ou les conditions relatives au maintien du statut consultatif énoncées au paragraphe 36 b) de la résolution 1296 (XLIV) du Conseil économique et social. En conséquence, de l'avis du Gouvernement autrichien, il n'y a lieu de prendre aucune décision au titre du paragraphe 36 b) de la résolution 1296 (XLIV) du Conseil économique et social.

FRANCE

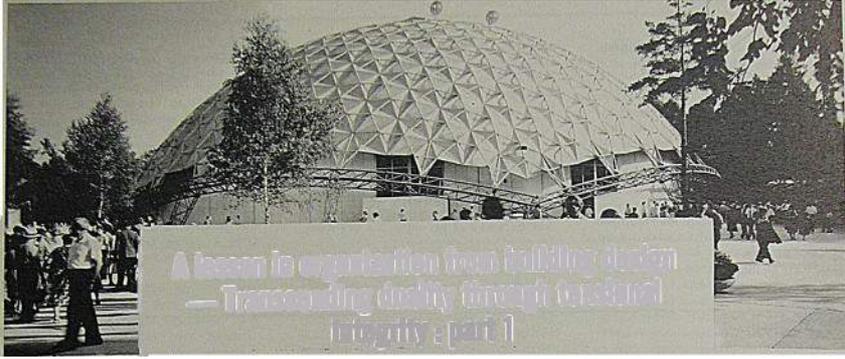
Le Gouvernement français attache la plus grande importance au rôle que le statut consultatif confère aux organisations non gouvernementales internationales accréditées auprès du Conseil économique et social. Il estime en effet que ces organisations non gouvernementales ont apporté une contribution précieuse aux Nations Unies dans des domaines aussi variés que ceux de la paix, du désarmement, des droits de l'homme, de la condition de la femme et des affaires sociales. Leur rôle, qui consiste notamment à assurer une participation populaire directe aux programmes et aux activités des Nations Unies, lui paraît essentiel et répond à leur vocation démocratique dans un contexte pluraliste.

Les organisations non gouvernementales expriment le point de vue de secteurs importants de la société. Leur principale contribution réside dans le fait qu'elles apportent aux débats un éclairage particulier. Le caractère spécifique de leur contribution a d'ailleurs été formellement reconnu par la Charte, notamment dans son Article 71.

Statutairement, tant à l'ONU que dans le cadre tripartite de l'OIT, des organisations non gouvernementales ont officiellement accès aux procédures de plainte en violation des droits de l'homme reconnus par la législation du travail, notamment de la liberté syndicale. Dans ces domaines, ces organisations non gouvernementales ont la faculté de porter le différend devant le Conseil économique et social, devant la Conférence internationale du Travail, mais aussi devant le Conseil d'administration et le Comité de la liberté syndicale du BIT. Des procédures très précises ont été prévues et sont d'ailleurs mises en œuvre chaque année, pour enquêter sur les plaintes exprimées dans les communications des organisations non gouvernementales.

Le Gouvernement français confirme son adhésion aux dispositions de la résolution 1296 (XLIV) du Conseil économique et social qui régissent les modalités de la consultation avec les organisations non gouvernementales. Il entend veiller scrupuleusement à leur stricte application.

«



A geodesic dome. Photo : Courtesy of Kaiser Aluminium (Tencor)

Introduction

« bureaucratic » view which emphasizes the importance of « rational, effective » structures, and (d) relationships between an organizational system and any corresponding (or complementary) network. The question is whether this approach offers us clues to a new kind of - psycho-social architecture ». This is explored in Part 2 of the article (see pages 258-265).

The Lesson from Building Design

It would be desirable to precede this section by a development of the familiar argument that there is an interplay between the principles governing the physical architecture and designed structures current in a society and those governing the psycho-social organizations of that society. Unfortunately space limitations preclude doing so in any adequate manner and it is only possible to develop the following argument in such a way as to stress that correspondence.

A building, like any other structure (including psycho-social structures) has forces acting on it, or stresses acting within it, which are trying to deform it or cause it ' to move. These forces pass through the structure, pushing on some elements (hence « compressive » force) and pulling on others (hence « tensile » force). Until the last century, most of the building materials available were effective in resisting compressive forces (e.g. brick, stone), but few

The fundamental problem in building is to support a load, whether in the case of a bridge or simply to establish a covered space. As in diagram 1 this can be done with beams on columns. But in order to increase the floor space and reduce the materials required for a given load, arches of increasing sophistication have been constructed from Roman times.

** The arch is essentially a device for dispensing with a center post, by splitting the thrusts a center post would support and by deflecting them to the sides. The downward pull of gravity on the keystone is converted into paired outward thrusts, which the face angles of successive stages transform into downward thrusts now borne by the side columns. Thus the columns actually support the weight of the keystone and its neighbours, without having to be located directly under the stones whose weight they bear. So a central space is cleared beneath the arch. It is clear that everything is held in place by weight, so that the continuities of stress are chiefly compressive. Two or more intersecting arches will define a dome-shaped space, again clear of supporters because the work of support has been transferred to peripheral columns...*

Though the visible continuities are compressive, there is in fact an invisible tension network which analysis cannot ignore. Each component of a stone dome

A lesson in organization from building design — Transcending duality through tentional integrity part 1

(1) There are few sources of information on tensesgrity, originally investigated by R. Buckminster Fuller. The Insights in the three principle sources of the material through their authors are not responsible for any interpretations here of the possible psycho-social implications of these principles : R. Buckminster Fuller. "Synergetics," explorations in the geometry of thinking. New York, Mac-

millan, 1975 (Tensesgrity, pp. 372-432).
Anthony Pugh. An Introduction to Tensesgrity. Los Angeles, University of California Press, 1976 (See also : Polyhedra, a visual approach. Same author and publisher).
Hugh Kenner. Geodesic Math and How to Use It. Los Angeles, University of California Press. 1976 (Part 1 : Tensesgrity, pp. 3-44).

It is characteristic of society today that any area of thought, belief or action is viewed in a dualistic manner, either positively or negatively. Much of the dynamics of society is determined by interaction, competition or conflict between those holding such polarized perspectives on any issue. The structures currently available reflect this situation by either (a) focusing attention on one pole of the duality, ignoring the other, or treating it with varying degrees of hostility, or (b) integrating the duality into the structure and permitting a change over time in response to a majorly (such as at elections) between acting in terms of one pole or of the other, or (c) integrating the duality into the structure such that one division favours the approach indicated by one pole of the duality and another favours that of the second pole. Since the dualistic approach is extremely divisive, the question is whether more adequate approaches are not available as a basis for new kinds of structures which could by-pass the conflict situation built into the dualistic approach without denying its reality.

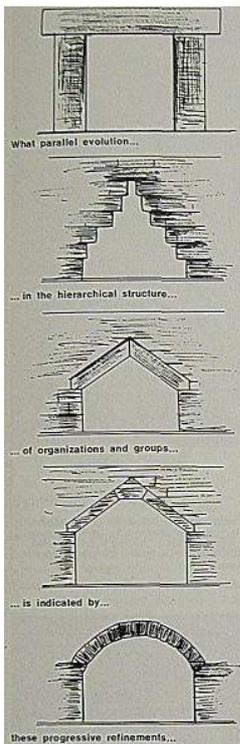
The purpose of Part 1 of this article is to draw attention to the manner in which this problem has been examined in architecture and how dualities are balanced and transcended within what are known as « tensesgrity » structures (1).

Such an approach suggests a number of interesting possibilities by which to handle : (a) sets of dualities, such as opposing values or viewpoints, (b) groups pursuing opposing objectives, (c) relationships between structures based on the « organic, wholistic » view that « all men are brothers » and the

durable materials were capable of withstanding even moderate tensile stress (with the limited exception of wood). Consequently buildings and bridges were designed so that large tensile stresses did not occur in them.

is held in place by the earth's gravitational field, pulling tensionally - downward » through the structure. If the dome were inverted, the force that pulls it together would pull it apart. If it could be placed in orbit, it would

DIAGRAM 1
Indication of the development of the arch (and its use in gothic cathedrals)*



drift apart. Thus its structural integrity depends on the weight of its components, and on the way they are oriented in earth's gravitational field. A successful design is essentially a feat of balancing. All forces are resolved along lines perpendicular to earth's surface, so that gravity and the mutual impenetrability of stones achieve a standoff. Any forces that deviate from this system of perpendicular resolutions will create a tendency to collapse inward or outward, and must be counteracted by braces or buttresses ». (Kenner, pp3-4).

As indicated above, the diagram shows how such buttresses may work (2). In the absence of buttresses, some form of steel band may be wrapped around the structure to keep it together at its region of potential failure (a chain is used around the dome of St Peter's in Rome). The necessity for such devices, designed with great precision by the engineers of today, makes clear how precarious is the structure's equilibrium, even when equilibrium is achieved without their aid.

This approach continues the tradition established in Roman times. Even in the past century, with the development of new high tensile strength materials (e.g. alloys), few structures have been designed to exploit them. In the sophisticated structures of nature, such as trees for example, there is however always a balance between the use of compression and the use of tension — and the compressive elements are usually much bulkier (to prevent buckling) than the tensile elements. As a consequence of this observation a completely different approach was suggested by R. Buckminster Fuller and here described by Hugh Kenner :

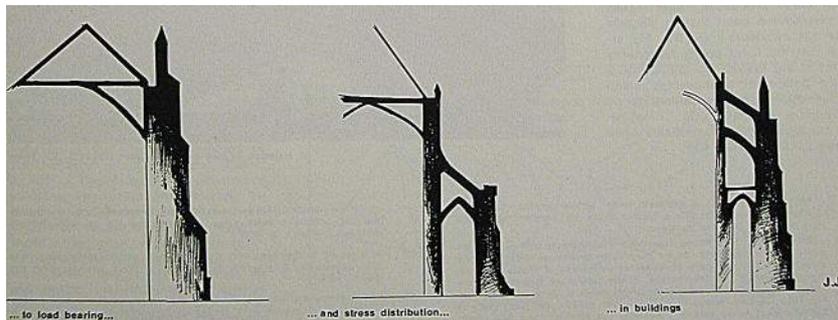
" The way to do this is to abandon altogether the concept of structural weight impinging on the compressive continuity of bearing members, the whole guarded by occasional tensional reinforcement. Instead of thinking of weight and support, we may conceive the domical space enclosure as a system of equilibrated omnidirectional stresses. Such a structure will not be supported. It will be pulled outward, into sphericity by inherent tensional forces which its geometry also serves to restrain. Gravitation will be largely irrelevant...

Un like the stone arch or the stone dome, such structures are not made stronger by being made heavier. In fact, they can with advantage be made negligibly light in comparison with the tensional forces that bind the components. The one-way tension of terrestrial gravity is replaced by the multidirectional tension of structural members. The system is therefore stable in any position. Moreover, a tendency to peripheral or local stresses, such as those restrained by the chain around the dome of St Peter's, is supplanted by a multidirectional stress equilibrium. A corresponding multidirectional tension network encloses accidental stresses wherever they arise. There are no points of local weakness inherent in the system ». (Kenner, pp. 5-7).

In such a system, the tensional integrity (« tensegrity ») for the transmission of forces throughout the structure is achieved through a continuous network of tensile elements, the compression elements being discontinuous in a soap bubble or a balloon, an envelope of surface tension attempts to close inward against the outward compressive force of the enclosed air. The equilibrium between tension and compression is

(2) The above quotation should be re-read in the light of the psychosocial implications argued in the following sections. There is an intriguing parallel between the keystone and the position and function

* See also : R. Bechmann. L'architecture gothique, une expression des conditions du milieu. Science, vol 1. 1978, 4, pp 94-105.



modelled as a spherical shape whose symmetry is complete. In a model of a tensegrity system (see Diagram 2), the struts push outward like the air inside a balloon, and the tendons pull inwards like the skin of a balloon. Increasing the forces in either the balloon or the tensegrity system increases the strength and load-bearing capacity of the system (3).

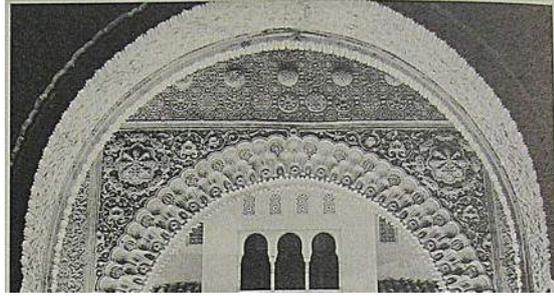
Systems and Polyhedra

There are two ways in which an operational space can be elaborated :
 1. The space is first conceived as distinct from its external environment. Fuller states : " A system is the first subdivision of Universe... Oneness, twoness, and threeness cannot constitute a system " (p. 95-96). Also : " Systems are unpredicted by oneness, twoness, or threeness " (p. 98). Namely it takes a minimum of four vertexes to define a set of planes giving insiderness and outsiderness, the basic requirement to ensure that a system is distinguished from its environment (4). In this approach, one commences with a whole (perhaps conceived as a spherical surface) and having broken it up by establishing a minimum of 4 vertexes, an independent system is achieved. Further vertexes can now be added to complexify the system, if this is appropriate to whatever it is supposed to represent (5).

2. Structural elements (struts) can be taken and it is found that an enclosed space is not defined until 6 such elements meet at 4 vertexes. The shape of the space can be rendered more complex using more elements. Again, a system is defined.

The seemingly simplistic distinction between these two approaches has been made because the first involves essentially the progressive conceptual breakdown of a whole, whilst the second proceeds in terms of the aggregation of parts.

With regard to the systems which emerge by either procedure, Fuller makes the unexpected point that : " All systems are polyhedra " (p. 95). He argues that the focal points for energy events in any system are linked into a closed pattern of relationships which can effectively be represented by an appropriate polyhedron (6). « Polyhedra are topologically describable finite system enclosures » (p. 655).



Decoration of traditional design; Photo : UNESCO/Cart

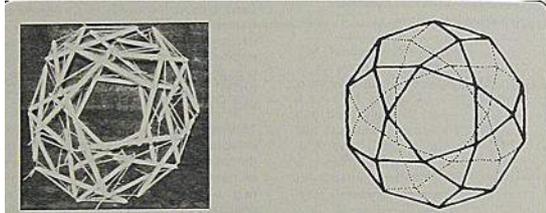
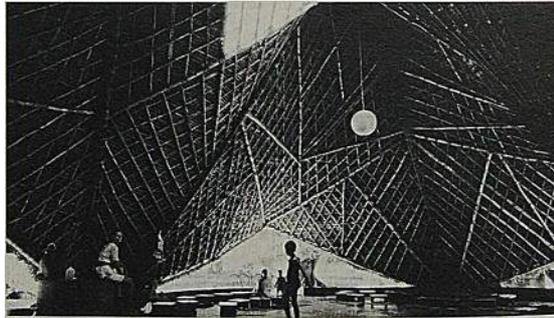


Diagram 2

(a) Photograph of a model of a tensegrity system (diamond pattern) based on an icosidodecahedron. (b) A sketch of the polyhedron clarifies how its edges are outlined by the tendons in the model. (N.B. Each pentagon side is the chord of a -great-circle-, making 6 great-circles of that kind — since one does not form part of a given pentagon. A further 25 great-circles, based on other symmetry features, are less immediately evident).



Harmony in new design. Photo : UNESCO/J.P. Helm

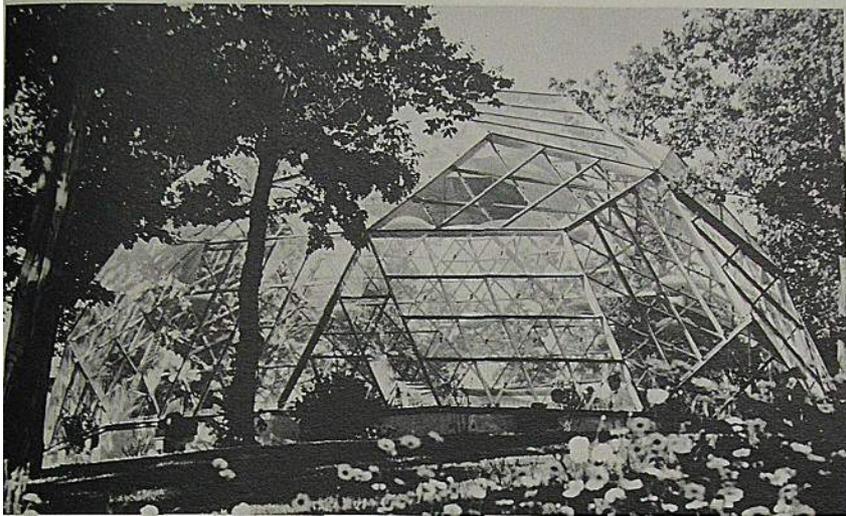
- (3) It has calculated that a geodesic metal sphere approx. 0.5 miles in diameter would drift like a bubble if the air inside it were one degree warmer than that outside.
- (4) " Not only can there be no awareness until there is otherness to be aware of, but there can be no magnitude awareness with only one otherness... you can have no sense of awareness of shape with just one otherness or two othernesses. Shape awareness commences only with three othernesses where the relationship of three as a triangle has finite closure. Shape is what you see areally, and until there is closure, there is no area of otherness. Not until we have four othernesses do we have macrocosmic volumetric awareness Four is re-

quired for substantive awareness. System awareness begins when we find the otherness surrounding us, when we are omnidirectionally enclosed. (Fuller, p. 656)

- (5) With regard to this approach, a special algebraic/logical notation has been developed : G. Spencer Brown, Laws of Form. London. Allen and Unwin, 1969.

- (6) . All the interrelationships of system foci are conceptually represented

pattern of forces constituting a geometrical integrity that returns upon itself in a plurality of directions. (Fuller, p. 97).



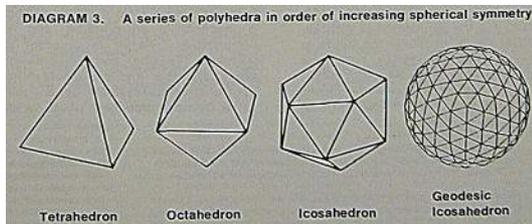
Plastic-covered geodesic dome, Photo I.P.S.

Symmetry and Sphericity

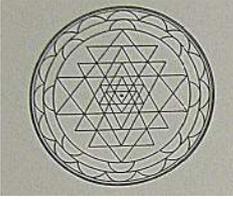
Since systems can be represented by polyhedra, two questions raised by both approaches are (a) how symmetrical is the space defined and (b) how closely does it approximate to a sphere. The first is important because : « Symmetry is a measure of a system's ability to absorb rearrangement that cannot be detected >> (Kenner, p. 54). « Ability to respond as a system means that local stresses are being uniformly transmitted throughout the structure, and uniformly absorbed by every part of it. The system's symmetry is not deformed : the system expands as a whole or contracts as a whole. This is not the behavior we are used to in any structures of our previous experiences. The compression members do not behave like conventional engineering beams... Ordinary beams deflect locally. The tensegrity « beam » does not act independently of « the whole building >>, which contracts only symmetrically when the beam is loaded. The tensegrity system is synergistic — a behavior of the whole unpredicted by the behavior of the parts " (Fuller, p. 401). «This principle points toward valuable economics in material. Instead of designing every part of the system to receive unassisted whatever loads it may incur, with consequent local accretions of weight and bulk, we may instead design the system on the assumption that local stress will be transmitted throughout its extent and shared by all its members. The normal state of the system is not a state of

rigidity but a state of equilibrium, to which, when disturbed, it seeks to restore itself » (Kenner, p. 12). The greater the symmetry, the greater the ability to distribute and absorb local stresses throughout the whole system. The question of the sphericity of the system is important as an indication of the efficiency with which energy may be distributed throughout the system. This is maximized when the planes of symmetry of a polyhedron constitute great-circles on a circumscribed sphere. Tensegrity systems, which are supported by tension are most economical when the tensile network runs for considerable distance without changing direction, namely when the ver-

tices are aligned along great-circle axes. In Fuller's words :
 " Compound curvature, or sphericity, gives the greatest strength with the least material... Not until we have three noncommonly polarized, great-circle bands providing omnitriangulation as in a spherical octahedron, do we have great circles acting structurally to self-interstabilize their respective spherical positionings by finitely intertriangulating fixed points less than 180 degrees apart... The more minutely the sphere is subtriangulated by great circles, the lesser the local structural-energy requirements and the greater the effectiveness of the mutual-interpositioning integrity. This spontaneous struc-



The Spheric Experience



"Zero and the concept of emptiness, too, are comparatively late inventions (clearly because

ceive of emptiness as such : we only manage to think of it as the absence of something positive. Yet in many metaphysical systems, notably

regarded as more fundamental and ultimately

nected with the fact, now acknowledged by most biologists, that symmetry, being the natural condition of an unstressed situation, does not require explanation, but on the contrary it is asymmetry which needs to be explained ...

— Christopher Alexander. Notes on the Synthesis of Form. Harvard University Press, 1971, p. 197.

tural self-stabilizing always and only employs the chords of the shortest great-circle arc distances and their respective spherical finiteness tensional integrity... With each increase of frequency of triangular module subdivisions of the sphere's unitary surface, there is corresponding increase in the fail-safe advantage of the system's integrity. (Fuller, p. 383).

Symmetry and sphericity therefore blend together in the quest for spherical symmetrical systems, when energy transmission efficiency and stress absorption capacity are the issue. Of all the polyhedra, however, only three (and their derivatives) provide prime symmetry systems : tetrahedron, octahedron (and cuboctahedron) and icosahedron (and icosidodecahedron). The icosahedron, with 31 great circles, has the highest number of identical and symmetric exterior triangular faces of all the symmetric polyhedra defined by great circles (tetrahedron has 4, octahedron : 13).

Returning to the elaboration of a system, it is the tetrahedron (4 vertices, 6 edges) which constitutes the minimum single symmetrical system, containing the least volume with the most surface (7). The sphere, in contrast, encloses the most volume with the least surface.

(7) * By tetrahedron, we mean the minimum thinkable set that would subdivide Universe and have interconnectedness where it comes back upon itself. The four points have six interrelatednesses" (Fuller, p. 333)

(8) * Functions occur only as inherently cooperative and accommodatively varying aspects of synergetically transforming wholes. The meaning of function is that it is part of a complementary pattern... Tension and compression are always and only interfunctioning covariables whose seeming relative importance is a consequence of local pattern

"What we do have experimentally as a sphere is an aggregate of energy event foci approximately equidistant in approximately all directions from one energy-event focus. This is a system in chords, and not the arcs ..." (Fuller, p. 654)

relatedness. Since it is concerned with the most economical relatedness, we can also speak of it as a geodesic spherical experience. This is where the importance of chords comes in. A chord is abstract, yet tensile. A chord has pull : we would probably not think about the connections unless there was some pull between them. The function of the chords is to relate. The event is the vertex. The reaction is the chord, the pulling away. And the resultant is the inadvertent definition of the nothingness of the areal and volumetric spaces... Areas and volumes are incidental resultants to finding the connections between events of experience ". (p. 656)

It is the centre hole that makes it useful.
Shape clay into a vessel;
It is the space within that makes it useful.
Cut doors and windows for a room;
It is the holes which make it useful.
Therefore profit comes from what is there;
Usefulness from what is not there.

* Almost-spherical polyhedra are the nearest approximation (to a sphere). It can only be treated are chords; ergo, geodesies "... (p. 654)

It is not a surface; it is an aggregate of events in close proximity. It isn't just full of holes; it

spaces. They become intervals. They become nothing. The Einsteinian finite Universe _ an aggregate nonsimultaneous Universe — is predicated only on the absolute finiteness of each local energy-event package and the logic that an aggregate of finites is itself finite >. (p. 655)

A system of this type, because of its relatively poor sphericity, could be said to be less efficient than the icosahedron type. The challenge in developing (or « maturing ») a system might then be to make it as closely-approximate to a sphere as possible, with an appropriate polyhedron. However, because the representation of systems by polyhedra has hardly been explored, except by Fuller, it is not clear which polyhedra-based systems would be useful under what circumstances — particularly in the case of psycho-social systems.

(N.B. Basic polyhedra, and their relationship to tensegrity systems, are described on pages 254-255).

Significance of Tension Compression

In looking for alternative structures, it is obviously not a question of proceeding with an attitude of « compression, bad; tension, good ». Fuller himself stresses the intimate relationship between the two : « *No tension member is innocent of compression, and no compression member is innocent of tension... Tension and compression are inseparable and coordinate functions of structural systems, but one may be at its most prominent phase, while*

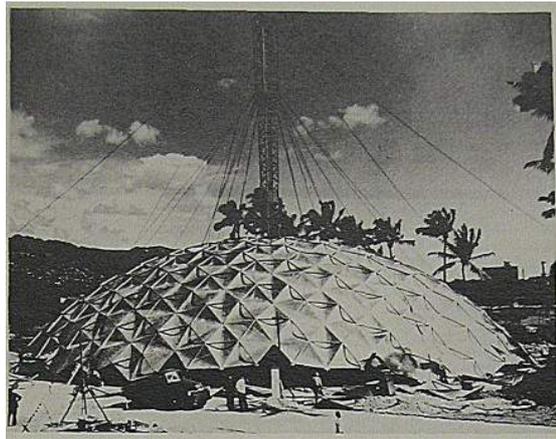
the other is at its least prominent phase » (p. 357, also footnote 8).

He does however make the distinction that : « *So we find the compression complexes tend to do the small local structural tasks in Universe, and the tension complexes tend to do the large structural tasks in Universe. As tension accounts for the large patternings and pattern integrities, compression trends into locally small pattern integrities* » (p. 357 and footnote 9).

The distinction between « compression » and « tension » and their full meaning elude precise definition because of their fundamental nature as analyzed by Fuller. Every attempt at definition succeeds only in presenting some characteristics but not all. And to the extent that a definition succeeds in encompassing a greater number of characteristics, the special nature of the abstraction required tends to render the statement incomprehensible. (The problem is similar to, if not identical with, the Yin-Yang concept in Chinese philosophy which is concerned with fundamental twoness; definition is itself a yang-type process.) The difficulty is compounded because an explanation can only be adequately given in terms of a specific system within which the relationship between a minimum of six such elements must

inspection. (p. 359).

(9) « The sum of all the interactive-force relationships of Universe must continually accelerate their intertransforming in such a manner as to result in ever more remotely and locally multiplied, islanded, compressional functions — comprehensively cohered by ever-enlarging finite patternings of the tensional function " (p. 360). In our societies, large agencies (compressional complexes ?) tend to be linked with various kinds of liaison networks (tensional complexes ?) which cross jurisdictional boundaries, thus ensuring a minimum of coordination.



Geodesic dome construction : clue for the creation of tensegrity organizations ?

be discussed. The concrete models of the tensegrity systems of interest here are constructed with « struts » and « tendons ». But the compressive struts also represent vectors (10), and the tendons represent tensors. For Fuller : « Vectors and tensors constitute all elementary dimension. A vector represents an expelling force (from the system) and a tensor an impelling force » (Fuller, p. 260).

The polyhedron by which the system is represented is delineated with lines (11) crossing at points (12). For Fuller : « Lines are vector trajectories » (p. 260) and « Every trajectory in a system will have to have at least two crossings » (p. 271).

The reader should refer to Annex 3 which illustrates the nature of tensegrity structures. If additional compressive elements (struts) are added appropriately, the degree of approximation to a sphere increases progressively. The tensile elements outline the sphere's outer surface (to the extent that the polyhedron approximates to it), whilst the struts outline the inner surface. The integrity of the spherical skin as a whole is independent of central support. It does however require that all tensional circuits be completed (possibly by anchoring a truncated structure to the earth, as in most geodesic domes).

(10) « A vector manifests a unique energy event — either potential or realized — expressed discretely in terms of directions, mass, velocity, and distance... A vector always has unique direction relative to other events. It is discrete because it has a beginning and an end. Its length represents energy magnitude, the product of its velocity and its mass. The direction is angular in respect to the axis of reference of the observer or in respect to an omnidirectional coordinate system » (Fuller, p. 259).

(11) « Speaking operationally, lines are the products of the energy interactions of two or more separate systems. The local environment is

a system. A line is always formed by an alteration of the local en-

The first principle of geodesies as stated by Hugh Kenner is : « The structure is tilted outward by a hidden tensional system. It resembles a contained explosion, like a balloon ; compressive out-thrusts held in a tensile web, with this difference that the forces pulling outward are also coming from the web. The structural members are not falling in together, nor in any important way leaning on one another » (p. 43). Fuller emphasizes that the behaviour of the individual compressive elements cannot be understood in isolation or in terms of a simple chordal two-way thrust : « The comprehensive spherical-tensor network can only relax inwardly. When all in place, the tensegrity-compression struts can only prevent the tension network from closing inward toward the sphere's center, which is its comprehensive proclivity. The synergetic force of the struts (that is, their total interrelationship tendency) is not predicted by any one strut taken singly. It is entirely omniradially outward. The force of the strut is not a chordal two-way thrust » (p. 386). The compressive element « is not fastened in shove or shear. It pulls outwardly of the spherical system, away from the tension members at both of its ends simultaneously; when released, it pops only outwardly from the sphere's center » (p. 390). It does not shove by the

Photo : Courtesy Kaiser Aluminium (Temcor).
tension member from which it is released.

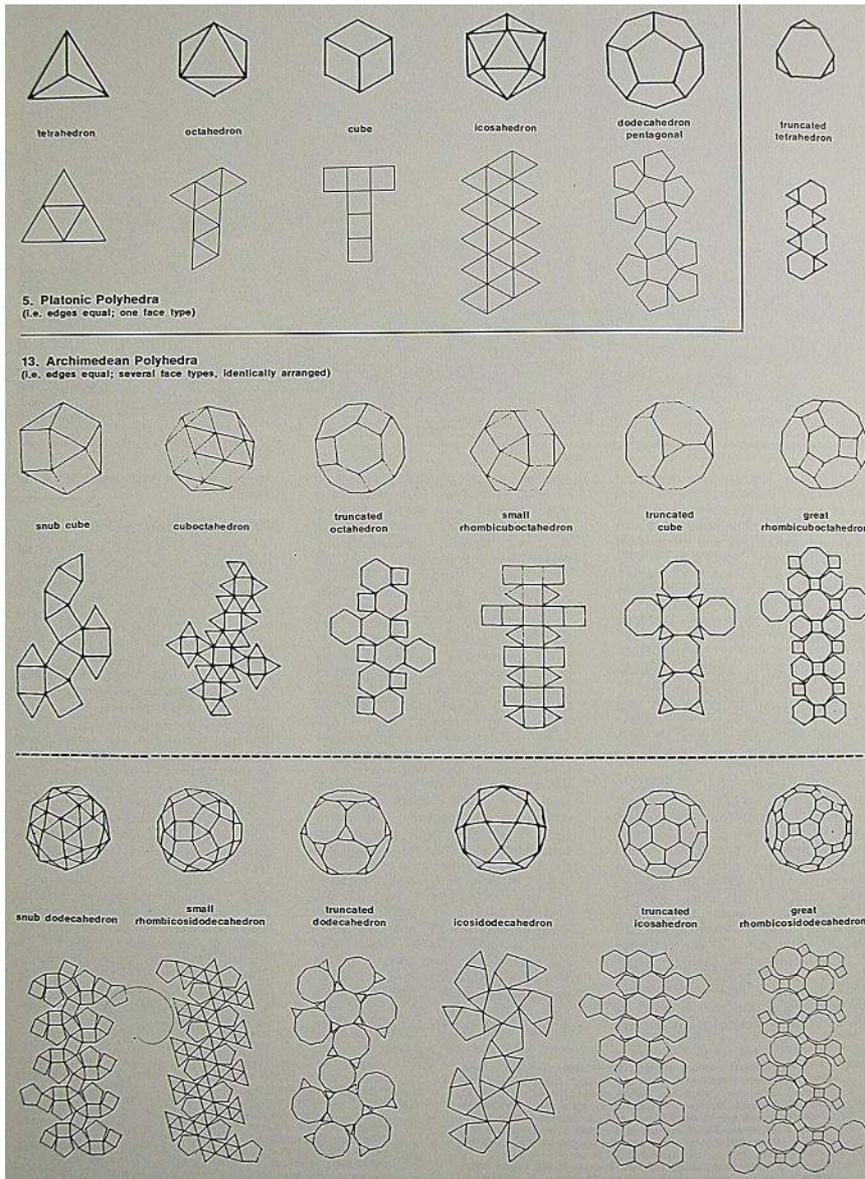
Preliminary conclusion

In the light of the above generalized description of tension and compression in tensegrity systems, the challenge is to see whether the intriguing clues can be used to clarify the nature of any parallel in psycho-social systems, especially organizations (see Part 2, pages 258-265). In so doing it should be remembered that tensegrity systems exist and can be comprehended as wholes, even though they may be complex (Diagram 2). Extensive verbal descriptions may in fact only serve to disguise the wholistic, synergistic qualities of such systems — hence the value of constructing and handling models, which may then serve as a scaffolding for reflections about their psycho-social equivalents. (The above paragraphs should be re-read in the light of any resulting insights.)

This is a working paper prepared by AJN Judge for the sub-project on networks of the Goals, Processes and Indicators of Development Project of the Human and Social Development Programme of the United Nations University (Tokyo), coordinated from the Institut universitaire d'études du développement (Geneva).

environment by another system. « Lines » are the patterns of consequences of one system altering another system either by adding to it or taking away from it. (p. 252).

(12) « What we really mean by a point is an unresolved definition of an activity... Without insiderness, there is no outsiderness; and without either insiderness or outsiderness, there is only a locus fix... A point's definitively unresolved event relationships inherently embrace potential definitions of a complex of local events. When concentrically and convergently resolved, the « point » proves to be the « center. — the zero moment of transition from going inwardly and going outwardly. Physical points are energy-event aggregations » (p. 257-8).

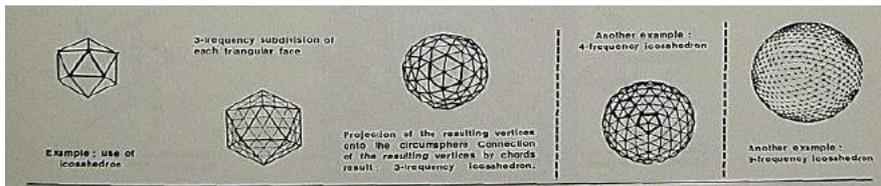


Based on : (q)	Platonic polyhedra (k)	Archimedean polyhedra (l)	Geodesic polyhedra (m)			Other polyhedra (c)	Variations, hybrids (d)
			Alternate subdiv.				
			Platonic	Archimedean	Archimedean		
Diamond pattern (h)			(e)	(e)			<g>
Circuit pattern (a,f)	(i)	0)	(n)	(n)			(g,h)
Zigzag pattern (a)		(p)	(n)	(n)			
Other patterns							
Non-spherical symmetry (b)							

- multilayer), ellipsoid, joined (by matching surfaces or volumes, as
- (c) Other polyhedra may be grouped as fellows, although few have (as other facially regular convex polyhedra (92), Archimedean duals (13), prisms/anti-prisms (ana duals), Kepler-Poinsot and related polyhedra, irregular polyhedra.
 - (d) Obtained by adding extra elements, eliminating or combining elements, converted into another in this way). Includes simple structures (spherically symmetrical) with elements through the centre.
 - (e) Diamond patterns lend towards Circuit patterns with the increase in the carried by the outer surface of the elements in compression thus eliminating the distinction between diamond and circuit.
 - (d) Compressive circuits may each be made up of :
 - (ii) the centres of such planar circuits may be identical with that of the sphere, or towards the circumference, (iii) alternatively, there may only be one continuous circuit, linking all compressive elements, which weaves about without touching itself (iv) a given figure may contain circuits with differing numbers of elements.
 - and vice versa.
 - (h) Diamond-pattern based systems can be described in terms of the number of elements and layers of which they are composed. Most of the larger structures are cylindrical and not spherical.
 - (j) Circuit-patterns can only be based on uniform polyhedra bounded by great circles and with four edges per vertex. These are : octahedron, tetrahedron, icosahedron and dodecahedron.
 - (k) Platonic polyhedra are : tetrahedron, hexahedron (cube), octahedron,
 - (l) Archimedean polyhedra are ; cuboctahedron, truncated tetrahedron, truncated octahedron, truncated cube, small rhombicuboctahedron, great rhombicuboctahedron, icosidodecahedron, great rhombicosidodecahedron,
 - (m) Geodesic polyhedra are : (e) diamond pattern, (n) circuit pattern, (p) zigzag pattern.
 - (n) Circuit-pattern systems can only be based on polyhedra whose triangular faces subdivided as many times as appropriate. All but the 2 snub Archimedean figures are in fact generated by 2 to 12 frequency divisions of the Platonic polyhedra.
 - (o) Circuit-pattern systems can only be based on polyhedra whose triangular faces subdivided as many times as appropriate. All but the 2 snub Archimedean figures are in fact generated by 2 to 12 frequency divisions of the Platonic polyhedra.
 - (p) Of the 13 Archimedean figures, 7 have 3 edges meeting at a vertex and form the basis for a tensegrity system.
 - (q) The valency of a tensegrity is the number of tensile elements attached to the end of each compression element. A minimum of 3 is required.
- The simple valence-4 spherical tensegrity is based on the octahedron; the two others are the cuboctahedron and icosidodecahedron. Valence-5 occurs with the icosahedron. Valence-6 is characteristic of geodesic subdivision.

GEODESIC POLYHEDRA GENERATION

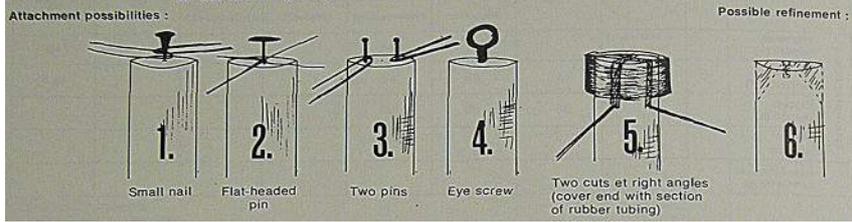
The basic polyhedra have too few edges to construct a spheric tensegrity system of large diameter without the structural elements having to be excessively long. Geodesic polyhedra, having the spheric surface broken up into as many smaller size faces as are required (thus requiring shorter structural elements), may be produced as follows, by the « alternate method » — after any non-triangular faces on the basic polyhedron have been divided into triangles, before the frequency sub-division is applied. The resulting triangular faces of the geodesic polyhedra, such as those shown below, can then be grouped together in patterns of triangles (1), diamonds (2) squares (4), pentagons (5), or hexagons (6), depending on the subdivision frequency and the original polyhedron used. If the subdivision frequency of the original polyhedral triangular face is a multiple of two, these patterns can then be used for tensegrities based on the « circuit pattern » ; if a multiple of three, on the « zigzag pattern ».



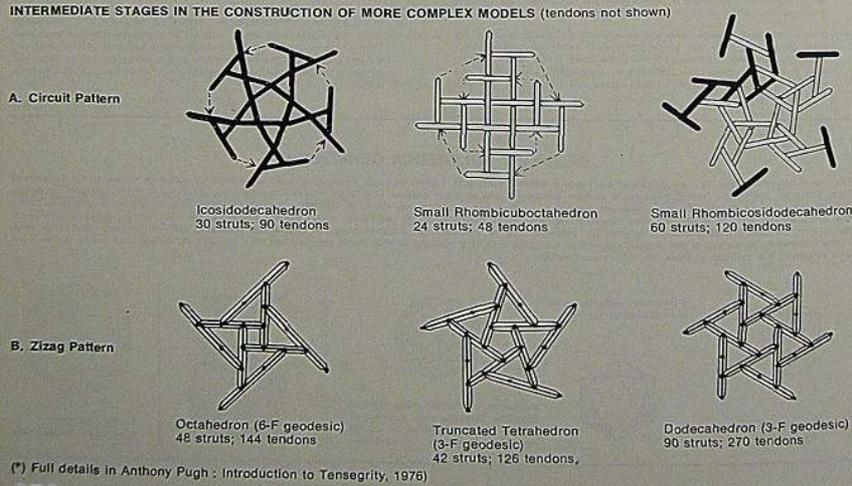
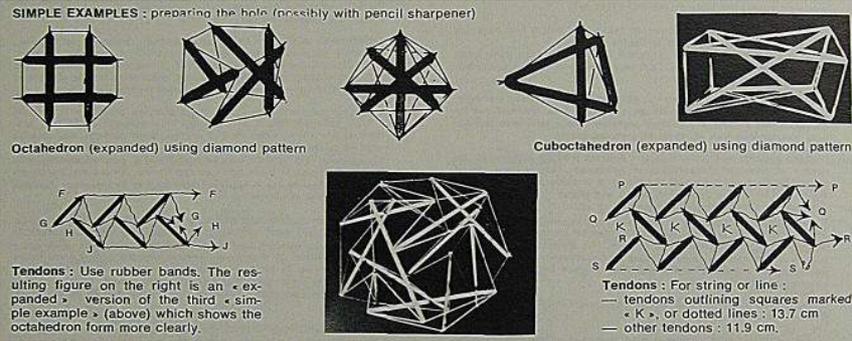
ANNEX III _____ **Constructing tensegrity models**

MATERIALS: Struts: Use dowel approx. 9 mm in diameter (or less) approx 23 cm in length (or less).
 Tendons: 1. Use rubber bands approx 5 cm long (or less) to experiment and for temporary models (advantage: the models can be adjusted to a variety of configurations and extra struts can be added). If necessary a band may be twisted to shorten the tendon.

2. Use fine string or nylon fishing line (preferably not monofilament) for permanent models.



Remarks : Rubber bands slip off 1; and 2 and 3 are not very tidy but are easiest for temporary models, although some favour 5 even though it does not give a clean end point. Model may look neater (for 1, 2 and 4) if the end is cut as shown in 6, after.

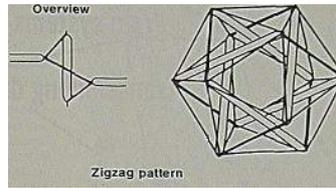
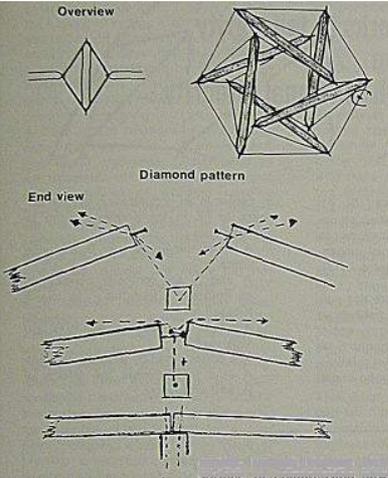


ANNEX IV
of tension elements

Patterns

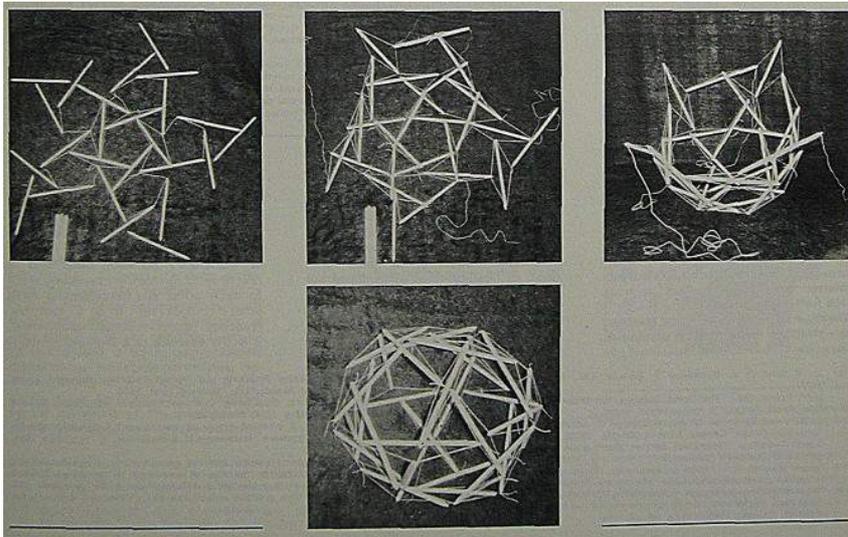
EXAMPLE : OCTAHEDRON (expanded)

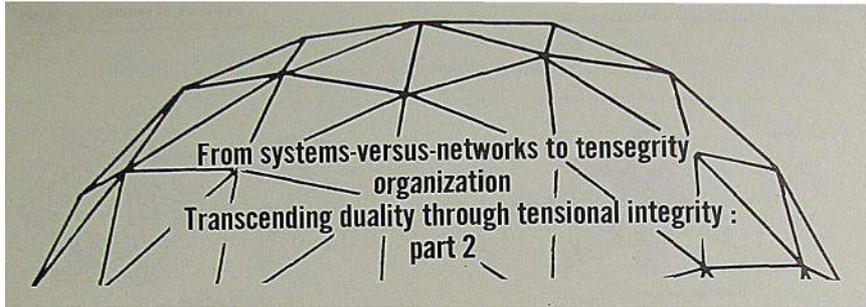
circuit, bolted; tension through outer surface of compression struts (e.g. in geodesic domes)



Circuit pattern : results from diamond pattern when there are many struts in the tensegrity. As a result (see on left), the space between the strut ends diminishes so they can be joined (eliminating some tendons). Finally, if the two converging strut ends are bolted to the middle of the strut they cross, then the bolt acts in tension. To the eye, the result creates the false impression (e.g. in domes) of continuity of struts in compression, whereas there is only tensional continuity).

STAGES IN CONSTRUCTION OF TENSEGRITY ICOSIDODECAHEDRON





Psycho-social Parallel : the Parts

Those who have handled models of tensegrity structures (discussed in Part 1 of this article, pages 248-257) are tantalized by their relative indestructibility despite their apparently extreme fragility — they seem to have some as yet hidden significance. The principles have only been used so far to build geodesic domes, whether large or small (13), although they are important to design for space missions (14). But, as Kenner notes; « If tensegrity has a practical use... the first principles of that usefulness remain to be investigated » (p. ix-x). Anthony Pugh goes even further : « Tensegrity systems are so fascinating that one instinctively feels they must be significant, even if it may be difficult to predict their most important application... The major importance of tensegrity may not be for structures but for something entirely different, such as philosophy... » (p. 56). Fuller's own focus is on tangible structures, but he uses them in his somewhat elusive fashion to demonstrate principles which are far more general and do not apparently exclude relevance to psycho-social structures (as the title of his book indicates); he argues, for example, that tension is secondary and local in all men's structural projections, that tension must also be secondary in man's philosophic reasoning (p. 350). The first task then is to explore some of the lines of equivalence between psycho-social structures and the architectural elements referred to in the previous sections (see Part 1, pages 248-253). Structure : The meaning to be attached to « structure » is a topic of continuing

(13) Lloyd Kahn et al. Domebook 2. Bolinas, Cal., Shelter Publications 1971.
 John Prentis (Ed.), The Dome Builders Handbook. Philadelphia, Running Press, 1973.
 (14) J. Clinton, Advanced Structural Design Concepts for Future Space Missions. (NASA Contact NGR-U-008-002, 1970). Distributed by National Technical Information Service (Springfield, Va) as : Advanced Structural Geometry Studies, Part 1.
 (15) Roger Bastide (Ed.), Sens et usages du terme « structure » dans les sciences humaines et sociales. The Hague, Mouton, 1962.
 (16) International organization networks: a complementary perspective In: Paul Taylor and A.J.R. Groom (Ed) International Organisation. London, Frances Pinter, 1977, pp. 381-413.

debate in the social sciences (15). Attention in this article is focussed primarily on structure in organizations as networks, and in networks of organizations (16), « world problems » (17), and concepts (beliefs (18). Such concepts of structure are not purely descriptive but lend themselves to an element of design in any social transformation process. Structure is therefore considered to be the relationship among elements in a psycho-social unit.

its nature in an organization system appears to lie in the common factor in the following :

- A is counter-function of B, and vice versa
- A and B are mutually controlling, or mutually « marking » (to use a football term)
- A acts in counter-response to B, and vice versa
- A is constrained by B, and vice versa
- A acts to eliminate the effects of B, and vice versa

« Tensegrity and Philosophy »

Mohists, each denies what the other affirms, and affirms what the other denies. What use is this struggle to set up * No * against * Yes *, and . Yes * against . No * ? Better to abandon

by the change in conditions.
 The wise man therefore... sees that on both sides of every argument there is both right and wrong. He also sees that in the end they are reducible to the same thing, once they are related

there he stands while « Yes * and « No » pursue each other around the circumference « .
 — The Way of Chuang Tzu, interpreted by Thomas Merton. London, Unwin, 1970.

Node : At the nodes compression and tension elements meet. Fuller gives a very abstract description of them which is valid for psycho-social systems (see footnote 12, page 257 this article). In the case of organizations, they may be tentatively thought of as roles, functions, or function-roles since these are indeed the focal points for energy events in an organization system. Compression element : If nodes A and B are linked in « compression », then

— A - struggles » and « bargains » with B, and vice versa. In some way A and B each act to keep the other « backed against the ropes » (to use a boxing term), to keep each other under pressure. They " work " or " operate " on each other and in response to each other, providing input to each other and transforming each other's output (19). It is a stimulus-response, action-reaction relationship. It is the essence of a working relation-

(17) Yearbook of World Problems and Human Potential. Brussels. Union of International Associations/Markind 2000, 1976.
 (18) John N.Warfield. Structuring Complex Systems. Columbus. Battelle
 L. Tester et al. A directed graph representation for computer simulation of belief systems. Mathematical Biosciences. 2. 1/2, Feb 1968, pp.19-40.
 (19) The compression elements may be conceived as « transformative * paths whereby energy/material at one end is converted through an appropriate work cycle into a different form at the other end. The finite time for this process establishes the * distance * between the two ends.

ship in which contiguous boundaries are defined in order to maintain the operational distinction between two fundamentally different approaches (to energy transformation, in its most general sense), which are nevertheless each the prime justification for the other's existence (20). The concept of the classical syzygy is also indicative: state of being yoked together; a pair of correlatives or opposites, the existence of which is maintained by its essential complementarity. Complementarity itself is intimately associated with the concept underlying compression (21). At best, it is a relationship of creative opposition appreciated for its real and meaningful challenge, fundamental to the dynamics of the system. At worst it is a source of extreme hostility whose consequences constantly endanger the integrity of the system (or possibly even prevent its creation, in the case of an organization). It may be argued that many psychosocial systems do not appear to have such opposed elements within them. However, as will be argued below, such « systems » are usually sub-systems whose elements do have such relationships to elements in other sub-systems, which are the justification for their continued existence. The « other » sub-system need not be an organization, for example, it could well be a problem complex, which is the focus of the first sub-system's concern. In fact, it may well be argued that a system is not stable if such opposed elements cannot be integrated within it to provide it with adequately structured dynamics.

If there is a parallel between the building principles favoured and those embodied in social structures, then most of our social structures should have a "compressive" element predominating, whereas the « tension » element should be secondary, in the case of a conventionally structured organization (whether a government bureaucracy, a commercial enterprise or a military unit), the nature of the compressive element seems to be embodied in the constraint associated with formal lines of authority and command, or in the employer / employee relationship of management and orders. Such formal relationships are usually asymmetric: A constrains B by directives and not the reverse. Similarly in buildings, beam A compresses beam B and not the reverse. (Although, in both cases, A is not unconstrained by its relationship to B.) In compressively discontinuous tensegrity structures, however, A acts on B as much as B acts on A, since they are forced together by the continuity of the tensional elements to which they are respectively

(20) Fuller makes the following points about compression, it accumulates potential, it is specifically directional, it is dispersive, inherently partial and tends to local dichotomy and multiplication by separation (p. 359).

(21) Gerald Holton. The roots of complementarity. Daedalus, Fall 1970, pp 1015-1055.

linked. The relationship is symmetric, although momentary asymmetry may emerge whenever the equilibrium of the tensegrity system is disturbed (22). The corresponding tension element would then be associated with liaison and advisory relationships or influence (as opposed to command). Clearly it is standard practice to maintain continuity between the compressive elements of the organizational system, with occasional (i.e. discontinuous) tensional (liaison) elements where necessary to keep the organization functioning coherently as a whole. With this approach society has succeeded in constructing extremely sophisticated organizational hierarchies — and there is a parallel with the progressively more sophisticated techniques for constructing load-bearing arches (see Diagram 1), if one considers the resemblance between multi-level arches and any conventional organization chart. Such structures are not proving adequate to the times however. They are cumbersome and ineffective in many ways — the term « spastic dinosaurs » has been used. Fuller suggests however: « Compression is that « realistic hard core » that men love to refer to, and its reality was universal, ergo comprehensive. Man must now break out of that habit and learn to play at nature's game where tension is primary and where tension explains the coherence of the whole. Compression is convenient, very convenient, but always secondary and discontinuous » (p. 356). The same could prove to be true for organizations. Tension element: If nodes A and C are linked in « tension », then its nature in an organizational system appears to lie in the common factor in the following:

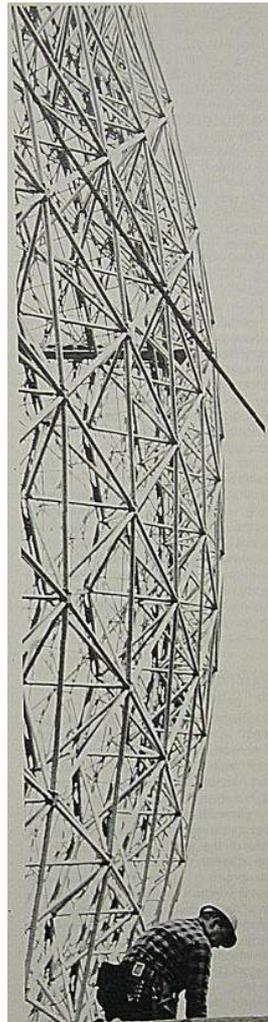
- A shares with C, and vice versa
- A has an affinity to C, and vice versa
- A responds in sympathy to C, and vice versa
- A adjusts itself in relationship to C, and vice versa
- A relates to and communicates with C, and vice versa
- A defines itself in relationship to C, and vice versa
- A cooperates with C, and vice versa.

In an organization tension is closely linked to the notion of a bond in its most general sense and the consequences of the associated information transfer.

In contrast to compression elements which are by definition discontinuous (in a tensegrity system), the special nature of a tension element only emerges in terms of its relationship to the continuous tensional network as an integral pattern (23). (This is considered

(22) Asymmetric effects are also introduced by the tensegrity's orientation with respect to gravity.

(23) Fuller makes the following points about tension. It is comprehensive, attractive and inherently integral. It is both omni- and supradirectional. It is universally cohering and comprehensively Unite. It is inherently total (p. 359).



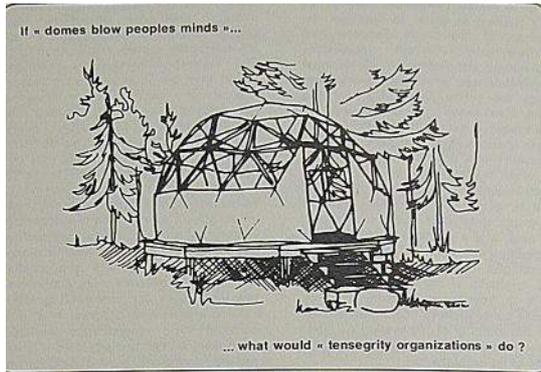
Dome construction (Expo 76) Photo: National Film Board (via Canadian Embassy, Brussels).

below). In social psychology, this has been explored (although perhaps not exhaustively) under the concept of small group "cohesiveness" or interpersonal attraction, namely « The resultant of all the forces acting on all the members to remain in the group » (24). One consequence of cohesiveness can cause another, and many of the consequences can cause interpersonal attraction, particularly in small groups. Communication, which is both an effect and a cause of interpersonal attraction, may however be of greater significance to the cohesiveness of larger groups where face-to-face contact is limited — and may thus be more relevant to the notion of a tensional network.

Fuller makes the point that little use has been made of tensile structural elements and that it is only in this century that materials have been developed of comparable strength to compression elements. Whether or not this is true in psycho-social systems, it can be argued that tensile liaison-type bonds characteristic of most organizations (including « cooperative relationships », « old boy networks », etc.) have been relatively weak compared to other bonds which have been used in the past (e.g. « blood bonds » or the « binding oaths » used by secret societies, religious orders, and extremist political groups). Alternative kinds of strong tension bonds may be possible — some may result from the operational bonds between those intensively linked in computer conferencing networks, for example.

Psycho-social Parallel : the Whole

Tensional integrity system : At first sight, a model of a tensegrity system surprises by its seeming improbability and fragility, as well as by the unexpected harmony of its various symmetries. But it is in its « beauty » that lies its very real strength (as handling the model quickly shows). Explaining the nature of the totality is not easy, however. Clearly it consists of a number of compression elements balanced with some degree of symmetry within a tensional network. But ability to comprehend the phenomenon tends to be limited to a ("two-dimensional") understanding of the collection of parts before the tensional network is tautened. Indeed, when constructing a tensegrity model, its surprising nature only emerges (1) when sufficient tensional links are made to cause the flat network to curve into three-dimensions, (2) when the final links are made to bring out from the confusing complex of ele-



ments the full spheric symmetry which renders it comprehensible, and (3) when, as a result of pulling on one or more elements (or bouncing it on the floor), it becomes apparent how the system responds as a dynamic whole (quite capable of « taking care of itself »).

If a « tensegrity organization » does constitute a radical departure, then there will be few parallels by which to explain how it would function. What is done, however, is to take pairs of essentially opposed or « incompatible » function-roles and to « bind » them into a mutually constraining relationship within a communication network, possibly based on some special social bond. The network of bond-based communications is then « tightened » to the degree permitted by the set of incompatibilities. Consequently, the latter are collectively forced by the symmetrical sphericity of the tensional network towards the « centre » of the system. The greater the mutual incompatibility, the greater the tendency of the compression elements to avoid confrontation and proximity to the centre, the greater the tension required to maintain them in position, and the greater the energy inherent in the system (25, 26).

To avoid creating the impression that this is simply another way of forcing people or groups into unsatisfactory relationships, the following points may be emphasized. The « incompatible » function-roles are brought into a stressful relationship by the binding nature of shared understanding amongst those involved (of which the centre represents the focus), which brings out as

much of each functional incompatibility as the role-occupants are prepared to handle within that context. It is the unique equilibrium (made possible by a tensegrity pattern) between what unites (i.e. the tensional network) and what divides (i.e. the many distinct compressional incompatibilities) which gives rise to (and derives from) the new kind of organizational structure. The functional incompatibilities are those which have to be faced (to create a viable organization) when all the functional realities (i.e. negative feedback loops ?) are accepted and brought into focus rather than avoided, whether deliberately or out of ignorance. The more functional incompatibilities explicitly incorporated, the more specific each becomes (and the less vulnerable will be the organizational integrity to imbalance in any one of them), the more viable and resource-conserving the resulting organization — namely the more spherically symmetrical the resulting tensegrity pattern and the more elegant the dynamic equilibrium between the functional elements. Perhaps one suggestive parallel is the naval term for keeping or running a « tight ship », by which is meant that all elements of the crew are bound into a disciplined pattern of relationships to one another and there is « no slackness ». The parallel is unsatisfactory in that this is usually achieved by hierarchical discipline and ordering. Another illustration is the notion of a « system of checks and balances » frequently advocated in drawing up a constitution. A final illustration is the situation frequently explored in fiction in which an objective can only be achieved by

(24) D Cartwright and A. Zander, Group Dynamics, research and theory. Evanston, Row Peterson, 1960, p.74.

(25) In sociology this is known as the equilibrium problem noted by R. Bales (1955). The group solidarity acts in opposition to differentiation and division of labour necessary in adapting to its environment, all groups are caught in transient equilibrium resulting from these forces. A structure most effective for the ends of the group may not be most

satisfying interpersonally. (The meaning of « most satisfying interpersonally » remains to be explored.)

(26) The question of synergy in small groups has been investigated by R. Cattell (see Cattell and Nice, 1960). He also explored « syntality » (as the small group equivalent of individual personality), and the problem of the classification of syntalities.

a group which overcomes its inherent weaknesses, and that of its members, by obliging incompatible individuals to work in a team (i.e. a tensional network) and to transform creatively the energy and stimulation of their mutual hostility — leading to mutual respect for the contribution of each, and of both together, to the whole. It may well be the case that under special circumstances groups slip into a tensegrity configuration semi-deliberately. Extreme examples might include family networks provoking schizophrenia (27), or military and fanatical « suicide » squads. Such examples however only reflect intuitive or instinctive understanding of the nature of such systems. An advantage of the tensegrity approach is that it can give considerable precision to a whole range of patterns for consciously ordering such relationships. System and network : An especially interesting characteristic of tensegrity is the manner in which « network » and « system » are explicitly and inter-dependently blended. For a number of years now, « systems » (despite their so-called efficiency) have been condemned as typical of the inequitable « establishment » mode of centralized organization. « Networks » have come to be regarded by some as a more equitable and participative alternative, less subject to abuse, and more appropriate to the needs of society at this time. The distinction between the two remains elusive, as a recent debate demonstrated (28). It is certainly not clear that networks can replace systems in all instances, although they may complement them in many cases (e.g. environmental networks vis-a-vis industrial corporations), or be viable where people or groups do not wish to become members of organized systems (e.g. the civil rights network). In a tensegrity model, by definition, a continuous network of tension elements is clearly evident. None of the nodes is privileged in this respect — there is no central node or group of nodes. On the other hand, as the term « tensegrity system » implies, the interplay between the tension and compression elements may be interpreted as a whole as systemic behaviour unpredictable from the behaviour of the parts considered individually. It could be argued that the network and systemic characteristics counter-balance each other at a new level of synthesis at which the usual weaknesses of each are by-passed. The usual disadvantage of a network in society is its inability to achieve a consensus with regard to implementing any precise course of action (if such can even be defined). It has difficulties in acting as a whole without being partly hierarchized. An organizational

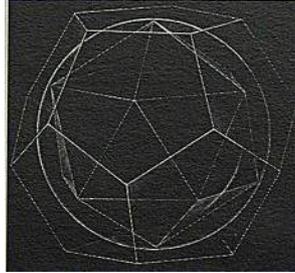
(27) R.V. Speck and C.L. Altheave. Family Networks. New York, Pantheon, 1973.

(28) Organizational systems versus network organization. Transnational Associations, 29, 1977, 9, pp 360-364 (Part 1), 11, pp 479-484 (Part 2).

(23) Rather than as a simple dismantling, of hierarchies, which also has

consequences to be explored below. This question will be considered later in connection with the growth of tensegrity organizations and their relation to « potential associations ». It may also be argued that tensegrity organizations would seem to lack the coordinative element essential to the effective operation of conventional organizations. This question is considered in the following section. Symmetry and coordination : If tensegrity organization is to be considered a viable alternative to conventionally hierarchized organization, it must be possible to demonstrate how the coordinative features of a hierarchy are recovered within a tensegrity organization. For those impressed by the need for transitional phases, it is desirable to view this as a transformation in which a degree of continuity should be evident (29). A typical (and simplified) organization chart has features like those shown in Diagram 5, which incidentally is always two-dimensional, however complex the organization. This may be compared with the two-dimensional

Diagram 4 : Polyhedral « duals »
icosahedron within dodecahedron



system is only able to act by marshalling resources in a hierarchically ordered manner and thus alienating or eliminating many who are unable to conform to its operational exigencies — thus eroding its own support and rendering its policies progressively cruder, since those who could refine them are excluded (or exclude themselves). It may be argued that an appealing feature of network organizations is their openness to participation of other nodes and to extension of the linkage pattern, and these are apparently not a feature of tensegrity. Additional nodes or tension compression elements can however be added to any structure. This may affect the "symmetry" with

a regular polyhedron (see Annexe 1). In what way could one be « mapped » into the other ? (30).

There seem to be several clues :

1. Coordination in a hierarchy is achieved by having a focal person (« the boss ») or body to which the coordinated bodies report and from whom they receive orders. In a tensegrity system, the coordinated response of the parts results from the symmetry of their positioning within the whole. There is no hierarchy of «bosses», but there are various kinds of symmetry. If the coordinative elements in the hierarchy could be transformed into symmetry features of the tensegrity organization, then coordination would be achieved without having to be « organized ».

2. A spherically symmetrical tensegrity system is a balanced and integrated breakdown of a functional whole. In other words, depending on the number of elements, a greater or lesser number of sub-functions are rendered explicit. It may well be the case therefore that a particular hierarchy may be missing explicit functions (perhaps left implicit in job descriptions) which would need to be explicit in the tensegrity organization because of the special importance of functional balance.

3. The concept of a compression element requires that there be genuine (creative) opposition between the two nodes. It may well be the case that this is absent from a particular hierarchy because the « functional opponent » of the unit in question is either a problem with which it is struggling or a functional unit in the hierarchy of a competing organization. This brings out a very important point. A tensegrity system is by definition complete and independent. A hierarchy invokes a counter-hierarchy, whether of problems or of competing organizational units (or of the problems which they represent). A tensegrity system can only maintain its form and characteristics by integrating opposition into its structure. A hierarchy can only continue to justify its existence by maintaining the importance of its external counter-part(s). In terms of the mapping problem therefore it may be necessary to integrate two or more counter-vailing hierarchies into one tensegrity system to achieve functional balance.

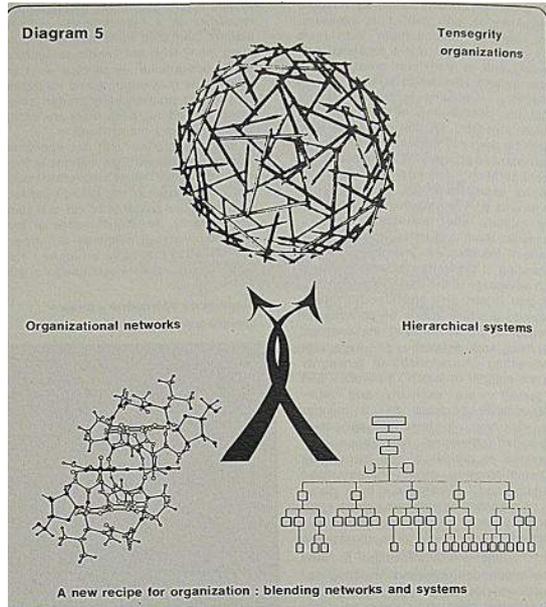
4. A polyhedron is usually the basis for a tensegrity system. There are very many polyhedra to guide selection of appropriate patterns of symmetry. It is probable that the range is much richer than is required "by the kinds of hierarchies in use at present or our sensitivity to the possible variety of

its advocates.

(30) There is inherent elegance in the expectation that better organization will emerge in transforming from a Planar unidirectional representation to one which curves back upon itself symmetrically in a plurality of directions.

organizations which they represent. On the other hand some configurations may be inherently less probable for reasons which remain to be clarified. In the light of these points, preliminary investigation has shown that a transformation is possible. Space limitations and the need for more detailed exploration preclude further discussion at this point.

The manner in which spherical symmetry « coordinates » the tensegrity system has been explained in an earlier section. (There is however no substitute for personally handling a model as suggested above.) In practice, the great-circle tensional pathways in a tensegrity organization could possibly be constituted by direct information (communication links (perhaps by topic, operating mode, etc.). Elements can fail or be omitted, or « redundant » elements could be added but Fuller makes it very clear that in the case of geodesic-type systems, the presence or absence of many elements does not affect the integrity of such systems. The full significance of the various kinds of symmetry (centre of symmetry, plane of symmetry, axis of symmetry, etc.), of which Fuller identifies seven (pp. 668-672), remains to be explored, although clearly they constitute « reference bases » about which equilibrium is maintained. Fuller considers that each (internal) plane indicates the existence of a (sub) system (31). Of special interest is the significance of the centre which is defined by the spherical symmetry. This is obviously a « coordinative focus » although it is not « occupied » by any element of the system (32). In a psycho-social system it represents the integration of all the system elements and as such is an abstraction in relation to the system itself as are the other symmetry features. It would be useful to explore the relationship between the system of « matrix management », developed for complex organizations (33), and tensegrity coordination. The former permits coordination across the matrix in two dimensions, whereas the latter offers the coordination associated with spherical symmetry, namely the great-circle linkages and inter-linkages. It would also be valuable to relate the concepts of symmetry and coordination to that of structural balance (34). Nested and linked tensegrities : The centres of the faces of the regular polyhedra defined by the tensional network of tensegrity systems are not occupied in any way, even though they mark the position of axes of symmetry. Poly-



hedral « duals » are in fact delineated by linking the centre points of neighbouring faces. In this way, for example, the cube is the dual of an octahedron (Diagram 4). This sort of approach may be used to « nest » one tensegrity within another, linking the two by tension elements to the nodes at the face centres. Although many could be nested in this way (and they need not be duals), the significance in terms of the coordination of the equivalent social organization is not clear. Instead of nesting two or more tensegrity systems they may be linked together (i) by matching surfaces or volumes, (ii) as masts or trusses, or (iii) as grids or skeletal structures. Although this implies a rich variety of structures, again it is not clear what is the significance in terms of the equivalent social organization.

Tensegrity equilibrium :
« When the tension members of a tensegrity are taut, it is in a state of equi-

librium. To this state, however stressed, it always seeks to return... it is impossible to pull any line so tight that it could not, with sufficient effort, be pulled a little tighter. Hence the capacity of the system to absorb displacements and restore itself » (35). Tensegrities are extremely resilient under light loads. A complex tensegrity model is never quite still, however tightly the tendons are stretched. On the other hand it stiffens rapidly as loading increases. However the system is disturbed, the tendons are stretched, hence at equilibrium the total length of the tendon system (and of each tendon) is minimal. A tensegrity is therefore brought to its equilibrium state by pulling everything as tight as possible (36). Thereafter any outward or inward force, in attempting to make the system larger or smaller, must also strive to make the tendons longer and will be inhibited by their restoring elasticity (37). Tensegrities multiply the elasticity of tension members. It might be supposed that if

(31) « It is experimentally demonstrable that an apparent "plane", is a "surface" area of some structural system » (p. 270).

(32) The geometry requires that a compression element passing relatively close by the centre should constitute a longer chord than one passing further away. The former could then only be part of a tensegrity

based on a simpler and less spherical polyhedron (e.g. a tetrahedron), increasing length may then be associated with greater functional incompatibility and "cruder" (or more fundamental) systems. In the extreme case, when the chord passes through the (coordinative local) centre, opposition is at a maximum and may be uncontainable within the system -- as is typical of unmediated conflict.

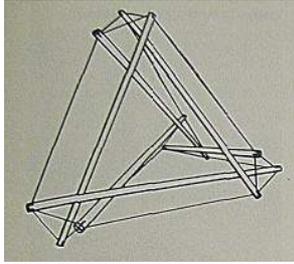
(33) Matrix organization and organizational networks. International Associations, 23, 1971, 3, pp 154-170.

(34) D Cartwright and F Harary, Structural balance : a generalization of Heider's theory. In : D Cartwright and A Zander. Op. cit.. PP 705-726.

(35) Kenner, p. 12.

(36) « If you just tauten one point in a tensegrity system, all the other parts of it lighten evenly. If you twang any tension member anywhere in the structure, it will give the same resonant note as the others... Until its tension is altered, each tensegrity structure... has its own unique frequency » (Fuller, p. 395).

(37) Kenner, p. 32-35.



a strut were displaced by 10 per cent a tendon would break because of inability to stretch 10 percent without failure. In fact, depending on the material and the tensegrity, a 10 per cent strut displacement may be absorbed by an increase of tendon length of 0.167 per cent — effectively multiplying the tendon elasticity (especially for small displacements, e.g. by 600 for 1 per cent, by 60 for 10 per cent, by 10 for 60 per cent). By analogy, the tensile network hidden in geodesic domes quite defeats all normal calculations of their strength (37). « Tightening up » the tension elements. may possibly be related to increasing the rate of information exchange in an organization. But exactly how to interpret these properties in the case of organizations remains to be seen (39). They do however recall a point made by Stafford Beer regarding reformers, critics of institutions, consultants in innovation and people who < want to get something done » : « They cannot understand why their strictures, advice or demands do not result in effective change. They expect either to achieve a measure of success in their own terms or to be flung off the premises. But an ultrastable system (like a social institution)... has no need to react in either of these ways. It specializes in equilibrium readjustment, which is to the observer a secret form of change requiring no actual alteration in the macro-systemic characteristics that he is trying to do something about » (40). The "alterations" he makes are simply absorbed and adjustments are made around them.

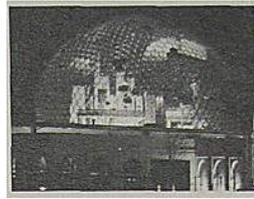
This could imply that tensegrity type organizations already exist effectively and are in fact a characteristic of our society — and it is the lack of understanding of their nature which prevents their amelioration in response to current social needs. Clearly if such organ-

izations can be created, they could probably be used as effectively to maintain a status quo as to maintain a change process. The question is how to switch between tensegrities and what is a . better » tensegrity system ?

Tensegrity Choice and Change

Which tensegrity should be used to represent or construct an organization ? There is a large range of polyhedra which have only been partially analyzed, and rarely as a basis for tensegrity systems. There are fascinating patterns of symmetry, regularity and transformation relationships between many of them. But since the whole area is very new and as yet has few applications, there is still much confusion. One would expect a comprehensive « periodic table » of polyhedra and associated shapes and structures to be produced in the near future (41). Until that is done, each useful point of entry cannot be seen in an adequate context and exploration is therefore confined to well-defined paths of investigation. Most of the published material converges on the construction of geodesic domes based on the octahedron or the icosahedron — a single application of a tiny fraction of the range of polyhedra.

If Fuller's approach is accepted, the range of polyhedra and related tensegrities effectively map the more or less viable « work paths ». A « periodic table » of these « energy patterns » would indicate the variety of ways of organizing and operating — although only a proportion could give rise to tensegrity-type systems. The question is then how to « improve » the energy pattern by switching from one tensegrity to another. It is not clear what the advantages of different types of structure might be in the case of organizations. The extremes, discussed earlier, of the tetrahedron and the sphere are however suggestive : the first, being most suitable to with standing external forces (as in an organizational hierarchy ?), and the second most suitable to handling internal forces (the current organizational problem, isomorphic with the « global » problem ?). Switching between tensegrity patterns might be relatively easy if the organization was supported by an appropriate information system (42). The relationships between the regular polyhedra are well-known : a node can become the centre of a face (triangular, square, pentagon, etc.), or the centre of a face can become a node, etc. These << operation » options give rise to the notion of pathways between tensegrities, some



of which are dead-ends or unexplored. All such changes are ways of restructuring in response to different kinds of stress : « retreat » into simpler structure, « expand » into a more complex structure, « integrate » into a more comprehensive structure with greater symmetry, etc.

Ultimately the challenge is not one of switching from a « bad » structure to a « good » one, but rather of having sufficient grasp of the whole range of patterns to be able to switch between any structure according to need (43). American football, for example, lays great stress on the ability of the team during the game to switch between 10 to 50 patterns of play. A form is always necessary, but any one of a variety of forms may be used, whether changed irregularly or regularly, frequently or infrequently.

A set of people, groups or organizational units could therefore « flip » between forms in responding to different circumstances, provided that each knew what « position » to take in each new pattern, and what functions to take care of.

A given network of people might therefore be maintained in tension by a variety of tensegrity configurations. This possibility has been explored in connection with the notion of a « potential association ».

Communication net experiments

Experiments on communication nets were originated by Bavelas (1948,1950) and Leavitt (1951) and have been followed by a large number of studies. According to one literature review (Glazer and Glazer, 1961) : « The area has been worked not only exhaustively, but to exhaustion. After a promising start, the approach has led to many conflicting results that resist any neat order ». And more recently : « It is almost impossible to make a simple generalization about any variable without finding at least one study to contradict the generalization » (45).

(39) Note also the sense underlying the phrase « tightening up » : an argument, a proof, or a legal case.

(40) Stafford Beer, Chairman's Address to the International Cybernetic Congress, 1969.

(41) Keith Critchlow, Order In Space; a design source book, London, Thames and Hudson, 1969.
Robert Williams, Natural Structures ; toward a form language. Moorpark, Cal., Eudaemon Press, 1972.

Anthony Pugh, Polyhedra; a visual approach. Los Angeles, University

of California Press, 1976.

(42) See articles on computer conferencing. Transnational Associates, 29, 1977, 10.

(43) In fact Keith Critchlow has attempted to show that the pattern of relationships between such structures can itself be mapped by them. See Order In Space, pp. 18-23, PP. 38-39.

(45) B E Collins and B H Raven, Group structure : attraction, coalitions, communication, and power. In: The Handbook of Social Psychology. Reading, Addison-Wesley, 2nd ed.

Such research is only partial relevant to that proposed, for the following reasons :

1. It is based on groups of 3 to 5 persons. On the basis of Fuller's analysis of structures, such a small number of elements does not give rise to stable tensegrity configurations. The simplest 3-D tensegrity requires 3 compression elements (i.e. 6 (unction-roles). The first two which are spherically symmetrical (and enclose a space) require 6 or 12 elements. The first with extensive great-circle symmetry requires 30.
3. The communication nets investigated are necessarily conceived in two-dimensions. Their patterns, in many cases (e.g. triangle, square, pentagon, wheel, etc.) of course constitute parts of a tensegrity tension network, but not the whole which requires specific combinations of such sub-networks (see Annex I).
3. The emphasis is on communication, whether one-way or two-way, and the nets do not distinguish between tension and compression features (essential to the formation of a tensegrity configuration).
4. Little attention is paid to the differentiation of roles. Although H. Guetzkow distinguished factors operating to allow role formation from those which induced interlocking roles into organizational structures (46), only 3 roles (plus a role-less role) emerged. As groups get larger, and the task more complex, more specialized roles tend to emerge — to a point where there is only very indirect interaction between some roles (47). As the group gets still larger, distant roles have problems knowing of each others existence and understanding each other's relevance to the purposes of the group — namely an « horizon effect », if the differentiated function-roles are represented as distributed around a sphere (48). Opposed or counter-functions are required in maturer groups to counter-balance each other's excesses. It is at this level of complexity and functional < incompatibility > that tensegrities could prove of value.
5. Such task-oriented groups in fact are dependent on external factors for the justification of their artificial (laboratory) activity. As such they are essentially sub-systems for which a state of equilibrium can only be reached within the context of a larger system. Tensegrity is primarily of interest in exploring systems at equilibrium (or switching between equilibrium states), namely

systems with a richer variety of counter-balancing functions.

Possibilities for Experiment

Clearly further thought is required before any actual experiments are possible. However at least three areas of investigation should prove fruitful at some stage. The first could be an attempt to set up a relatively small group (e.g. 12 to 60 individuals) such that each was paired with another in a compressive relationship and had defined tension links with some others in accordance with the selected tensegrity structure, if necessary one individual could fulfil several roles (i.e. act as several distinct nodes) since it is the activated role-functions which are directly interrelated by the tensegrity pattern, and not necessarily the individuals (Or two individuals could handle one role). A more ambitious experiment would have each role-function activated by a small group or organizational unit. A third approach would focus primarily on the design and functioning of an information system whose nodes, would be distributed and interlinked according to the selected tensegrity pattern (49).

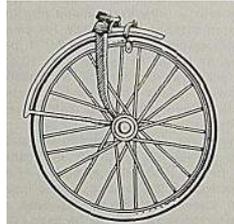
Two questions need to be clarified before (tentatively) undertaking such experiments. The first concerns the breakdown and distribution of role-functions for a tensegrity of a given complexity. Normally in an organization the number and relationship of functions is settled empirically in the light of past experience and in response to foreseen weaknesses. Such insights need to be used to work out for an organization with N function-roles, just what they tend to be. The second question is how such organizational tensegrities are to be « tightened up ». Two approaches seem possible. The first involves increasing the -rate or intensity of interaction between the role-functions in tension relationship. The second is to add more compression relationships to the network until it is forced into a state of tension, namely by increasing the effective number of elements in the tensegrity (50). In either case, it should be noted that tensegrities are very tolerant of considerable departures from symmetry.

As any one who has built a tensegrity model knows, until almost all of the elements are tightened in place the result looks like an « unwholly » mess.

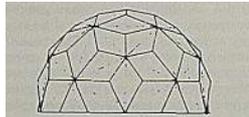
Stages in tensegrity innovation ?



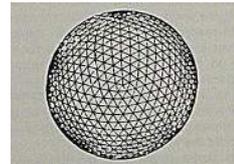
Semi-circular « tensegrity » : the bow



Circular tensegrity : the bicycle wheel



Hemispheric tensegrity : the dome



Spheric tensegrity : applications unknown

(46) H. Guetzkow. Differentiation of roles in task-oriented groups. In: Cartwright and Zander. Op. cit., pp. 683-704.

(47) There is also the question of the structuring effect of the limitation on channel capacity and the effects arising with more than 7 channels per role. See : G. Miller. The magical number seven plus or minus two; some limitations on our capacity for processing information. In his "Psychology of Communication. New York, Basic Books, 1957.

(48) There is then a tendency for each role-function to act as though it was at a central point on a "flat-earth" rather than appreciating that it has to deal with "functional roundness" and that even the most distant and apparently "irrelevant" are in no danger of "falling off" an edge.

(49) This raises very interesting problems in the case of computer based

Information systems, particularly the file design in the case of conferencing-type systems which should reflect the « great-circle » tensional pathways between participants, possibly only permitting certain links for each participant. Even more interesting are the computer implications of « flipping » between tensegrity patterns according to the problem faced by the group.

(50) " A fully relaxed spherical tensegrity structure may be crumpled together in a light bundle without hurling it. (Ist as a net shopping bag can be stuffed into a small space. As struts are inserted into the spheric-tension network, the whole spheric system is seen to be expanding omnisciently as do pneumatic balloons when air is progressively introduced into their previously crumpled skins " [Fuller, p. 386-7).

It is unlikely that creating a tensegrity organization would avoid this stage, particularly in view of the lack of experience and the uncertainty as to exactly what are the snags — if such an organization can be constructed at all. The significant moment, as when constructing a model, would be when suddenly the symmetry and dynamic integrity of the whole emerges from the jumble of the parts. Whether and in what way, this awareness is more richly structured than that of a group which suddenly recognizes that « we're a team », remains to be seen.

Other possible implications

As indicated in the introduction, the significance of tensegrity is not limited to organizations. Since it is a very general approach to tension/compression relationships, wherever they may occur, it may be significant wherever there is any question of organization. It could be useful to order sets of world problems in tensegrity patterns to clarify why it is so difficult to have any impact on such equilibrium systems (51). The approach could be useful for clarifying conflicting values and needs (possibly in relation to problems). It could provide insights into a new approach to ordering, and interrelating concepts to bring out interdisciplinary dimensions (linked to great-circle patterning and symmetry ?). It also has interesting implications as a kind of three-dimensional mandata (or « psycho-cosmogramma ») with whose elements an individual can associate and interrelate a complete range of psycho-spiritual functions (52). « In becoming conscious, we gain awareness of the dualities that have moulded our psyches : activity-passivity, competition-cooperation, independence-dependence, logic-intuition, and many more... the human psyche is comprised of many different dualities that must be kept in balance in order for the individual to be whole, to be truly human » (53). Hitherto we have lacked bridges between such dualities, precisely related to a larger whole, and which are at the same time isomorphic with external realities. Tensegrity ordering restates a problem of organization. By the method of handling the dualistic compression relationships, it is no longer a question of what one is « for » or « against », of what one considers « right » or « wrong », or « correct » or « incorrect », etc. Each such polarized perspective merely invokes the activation of the other and any associated conflict, of

whatever form. Tensegrity ordering balances and interrelates such dualistic perspectives within a wider context, but without suppressing their significance — the reality of each dualistic dynamic is in fact essential to the structure of the larger whole. The challenge is then more to see (i) how such dualities interweave, (ii) whether irregularities in the pattern are due to inadequate attention, discrimination or detachment, and (iii) what emerges from consideration of the whole and how this affects understanding of the parts. A possible step then becomes one of switching to new tensegrity patterns by « reinterpreting » the whole. Each such pattern may bring out or suppress nodes, although each is always potentially present.

There is also the possibility that tensegrities may be used to represent stages in a process over time, rather than processes at a particular time. Tensegrities also seem to be helpful in relation to the dialectic approach, especially in the manner in which they represent thesis, anti-thesis and synthesis within a larger whole, itself susceptible to refinement.

Another important possibility arises from the fact that the most fundamental dyadic relationships are of such a degree of abstraction that they cannot be properly contained by verbal descriptors whose elements are often themselves determined by, affected by, or in some way incorporated within such relationships. It is therefore difficult to comprehend them adequately, because of the proportion of the totality of experience which is inherent within them. They may however be « projected » down into a system of more elements in which aspects of the dyadic relationship are represented. It may well be that only such aspects can be understood and that not even the existence of the basic relationship is suspected. This is particularly so because at each new step down in the projection, new axes and planes of symmetry may emerge accompanying the new surface features. Each of these may help to say something different about the fundamental relationship and be closer to everyday experience.

Conclusions

The implication of the suggested parallel seems somewhat incredible. It appears preposterous to expect that any useful social structure could emerge from any approach which involved weakening the continuity within formal

lines of authority (normally considered as primordial and sacrosanct) and ensuring a continuity of liaison-type bonds (normally considered as unfortunate, necessities, if they cannot be avoided). Aside from the break with tradition, it is personally very threatening to the extent that conventional structures provide some support for a person's own personality structure — because, of course, some personalities match well with the usual hierarchical structure. Sophisticated hierarchies seem to constitute the epitome of order, whether personal or social (54).

It is not to be expected that a conclusive case could be made in such a limited space for what constitutes a rather dramatic departure from conventional approaches to organization. The questions raised are very instructive, but further investigation is of course required to substantiate the argument, if it is valid. The social system equivalents of compression and tension need to be related more closely to existing organizational concepts. In particular it would appear that they are equivalent to some characteristics associated with formal and informal organization respectively, rather than to all such characteristics. The same distinction must be made in the case of « communication » and « task performance ». The extent to which the concepts cut across such conventional categories, or are more fundamental (56), remains to be determined — as does the manner in which the contrasting characteristics are integrated within a tensegrity pattern.

The balance struck between « system » and « network » — both sophisticated concepts of organization compared to those that came before (55) — certainly suggests the possibility of the kind of « quantum leap » in organization that is being sought everywhere with some degree of desperation. It is particularly interesting in that systems are now being seen by some as masculine, yang-type structures, whilst the rise in interest in networks is seen to be associated with a feminine, yin-type influence. The global problems we face are however unlikely to be adequately met by switching between extremes, however great the need to compensate for past imbalance. It is intriguing therefore that tensegrity offers the possibility of a kind of « androgynous » organization which could take us beyond the swings of the historical pendulum (56). It could prove fundamental to the creation of a « New Transnational Social Order ».

(51) Yearbook of World Problems and Human Potential. Brussels. Union of International Associations/ Mankind 20X50. 1976 (especially introduction).

(52) Giuseppe Tucci. The Theory and Practice of the Mandala. London, Rider, 1961.

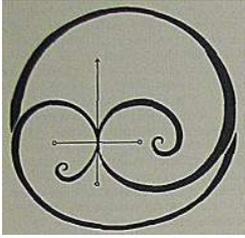
(53) June Singer. Androgyny. New York, Doubleday, 1976, p. 1 and 5.

(54) A few years ago Fuller's geodesic domes (one application of tensegrity principles) seemed equally preposterous. Yet an early dome, 145 feet in diameter, was erected in 22 hours for immediate use as a

concert hall. Another, 384 feet in diameter, weighs only 1,200 tons, compared to the 10,000 ton dome of St Peter's in Rome (diameter 131 feet). A three-quarter sphere, 250 feet in diameter, weighs 600 tons (USA pavilion at Expo 76).

(55) system/Network complementarity. Transnational Associations. 29. 1977, 9. PP. 365-368 (especially too table).

(56) June Singer (Androgyny. Op. cit.) discusses many of the more fundamental aspects of psycho-social duality and their integration, which should help to clarify equivalents to tension and compression.



A congress that dared the unthinkable



Congress symbol : Design, Sempas Community



Photo by Richard Mack



Picasso

Introduction

This is a report on an extraordinary international event which took place in Florence (19-28 February 1978) under the name "New Age Congress". The Congress was unusual in so many ways that any conventional report can only contribute to the pattern of reflections around the event rather than producing a neatly ordered overview. Consider the « confusion » surrounding the following points which are normally very clear for any conventional gathering :

Organizers : The « organizing committee » changed its nature, function and composition every week or so, from its origin in 1977 right up to and through the opening of the congress. It absorbed new individuals, who moved to Florence at various times prior to the event, in order to contribute in one way or another. This process, and the associated conflicts, was a traumatic experience for all concerned — but an experience recognized and accepted (with much difficulty) as necessary to the refinement of the vision of the nature of the congress. In most cases those attracted together in this way had neither met before nor been members of the same association — and yet they all shared aspects of a deeply felt sense of commitment to a common but undefined purpose. It was accepted that each such individual had something unique to contribute to the organizing process.

Theme/Purpose : The theme was only put into written form and distributed 7 weeks before the Congress and even then it was expressed in the most general terms :

" We are coming together in Florence in February to explore, experience and celebrate human transformation. In that beautiful setting where flourished the first renaissance of modern times, the opportunity is being presented to facilitate and confirm the birth of a New Renaissance.

You are invited to participate as a co-equal, co-creative delegate in the colloquia and workshops, to experience the many presentations and associated events of this World Congress, which should prove to be an historic and unifying event. The expansive work of all of the

participants will be to consider the dimensions of the New Age, of the New Renaissance and of alternative futures. Participants will daily question, learn, congress and celebrate using the general principles of growth found in the processes and structures of Nature. Let us see with ever greater clarity that our planet is undergoing radical change out of which arises an impulse of creative synthesis. An all-inclusive unitive power floods the feelings, thoughts, and motivations of attuned people everywhere, igniting a common vision of renewed organic earth. A new consciousness and the energy of a new dispensation for humankind is now emergent. The signs are everywhere. The pace of transition depends directly upon us. Wherever we are, there is that thing which it is appropriate for us to do, to hasten a new and better day"

It is typical of the event and of the attitudes of those involved that the final text used in the printed programme consisted of paragraphs extracted from a circular letter mailed independently by a person who had briefly visited the organizing group in Florence after the above text had been distributed.

Finance : At no time did the Congress have a well-defined budget. In many instances the source of income as composed of gifts ranging from \$ 4,000 new sources emerged just before disaster could have struck. Typically the down-payment for the meeting hall could only be paid one week before the Congress opened. The printed program to \$ 58 from 17 individuals, and composed of gifts ranging from \$ 4,000 to \$ 58 from 17 individuals, and loans ranging from \$ 2,500 to \$ 500 from 8 individuals. An early budget estimate was \$ 400,000, and the Congress was finally held on a budget of \$ 40,000. The other main sources of income were registration fees (at \$ 40 per participant, plus gifts) and film rights. The Congress ended with \$ 24,000 debts which have to be cleared by the same process of individual commitment. Many of those most committed placed themselves personally in debt to make the Congress happen.

Publicity : As noted, above, circular mailings were first distributed only 2



Ponte Vecchio, Florence

months before the event. Publicity was severely restricted by shortage of funds for printing and postage, by lack of adequate mailing lists and by the well-known problems of the Italian postal system. Much was however accomplished by word-of-mouth and personal contact — despite the wider reverberations of the conflicts between those participating in the organizing process. Participants : At no period prior to the event itself was it at all clear how many people would be attracted to the Congress. Very early hopes were for 1500, although it was believed by some that the event would be worthwhile even if only 60 people participated. The actual number was 300, of which over half were present for the full 10-day period. Oddly enough, although the majority of participants spoke English, the nationalities of participants were never a matter of interest. About 40 % of the participants were of North American origin, although many were resident in Europe. Others were from most Western European countries and Yugoslavia with a significant number from the UK and Italy. The kinds of person participating are discussed below. Results : The organizing committee deliberately abstained from any attempt to define the results, if any, which would emerge from the congress process. Considerable effort was however put into the production of a documentary film (by professionals acting in a private capacity) based on the Congress and its environment — with the expectation of distributing it through TV networks around the world (1). It so happened that the finances precluded recording speeches (except occasionally as part of film-making). There was no desire to push for recommendations, declarations or resolutions. A book is being produced (2) containing contributions of some key resource people present but this does not attempt to reflect the heart of the congress process. No rapporteur was appointed or desired. A number of individuals present, including journalists, planned to report on the Congress in the light of their own experience and note-taking. This is one

(1) The degree to which the film could or would reflect the actual Congress was holly debated with the consensus being that if it would serve a useful purpose without completely conveying what really occurred or what was si most meaningful to individual participants at the event. (The

such report. It is as partial and subjective as the other attempts to reflect what occurred.

film itself only came about because of a considerable personal financial commitment on the part of those directly involved) Diane Cileto
13 Charlwood Place, London SW1, UK.
(2) Contact : Gus Jaccaci, Box 299, Groton, MA 01450, USA.

Organization-Programme

A great deal of effort prior to the Congress was put into designing and organizing a tentative programme of lectures, plenary discussions, workshops and social events — to the extent that this was possible, since even a week before the Congress it was not certain which key resource people were coming. Those involved were very sensitive to the need to make the gathering as participative as possible, benefiting from key resource people giving lectures, but avoiding the tendency to turn the Congress into a vehicle for « super-stars », particularly those anxious for ego-nourishment. It was repeatedly stated that each participant was a resource person and the problem was how best to focus those resources for the benefit of the whole. Suggestions were made in the program concerning discussion group formation by any participants.

The first day was organized in a highly participative manner as planned. Already however there was considerable pressure from key resource people to know when they were « on ». The number of sign-up sheets for workshops (by « middle-class » resource people), displayed on a single wall, rose quickly from 10 to 60 as competition for the attention of participants increased. The planned events for the second day were thrown into disarray when one of the key « upper-class » resource people threatened to leave unless given a 3-hour plenary solo. This was done. And by the end of that day of excessive conventional structure, a core group of " those sensitive to the scheduling problem " met to review how the schedule was to be balanced in the light of (a) pressure from super-stars, particularly for long sessions, (b) commitments to super-stars (made by single individuals amongst the core group of organizers), (c) the participative

At this meeting a compromise was reached to handle in parallel those participants having a preference for « structure » (namely well-ordered lectures and workshops) or for « process » (namely participative discussion and spontaneous workshops). This was implemented on the third day, during which the pressure on the scheduling office and the organizing group continued to increase — whether from unfulfilled super-stars or those wanting to give workshops in the limited space available. The difficulties were compounded by « hit-and-run super-stars » who could only be available for a plenary time-slot convenient to themselves before they had to leave. These difficulties were presented to a plenary meeting on the fourth day (together with the issue of whether the Congress should, could or would support the position of North American Indians before the international community). This was the first occasion on which it was made clear to the Congress as a whole that it had a responsibility for deciding on its own scheduling priorities for the forthcoming days. However, each group responded in the light of its own interests. For those who had expected a well-packaged series of events (which had never been the announced intent), the Congress was by now evaluated in such terms as : disorganized, discourteous to eminent speakers, too many leaders, lack of consensus, unfulfilled commitments, lack of adequate communication, etc. A number of participants and speakers had left as a result. Pressure on the - organizing group » had reached boiling point by the evening of the fourth day. (The organizing group continued to consist of a core of 8-15 people who felt strongly committed to the Congress as a whole. Because of the continuing dynamics amongst members of this diverse group, some were always absent from any particular meeting.)

The group was particularly concerned that it was concealing the reality of the Congress from the participants as a

emphasis of the congress and the desire not to over-organize.

whole, disguising its acute problems under a neat schedule of events to meet every taste, and taking authority in a manner which prevented participants from acting in a fully responsible manner rather than as simple consumers of available "products". Necessary administrative and other tasks were instigated in a very organic manner as the need was perceived by whoever in the core group was most sensitive to it as it emerged. Essential tasks of food preparation, cleaning / chair arrangement, registration, etc. were performed by volunteers or by some participants in repayment for a waived registration fee. The situation was dramatically changed on the evening of the fourth day at a core group meeting — held as a « fish-bowl event » in the middle of the plenary room (but with only 5-20 observers). After considerable discussion it was unanimously agreed that the meaning of the event in all its ramifications could best emerge if the core group ceased to « organize and schedule » and just « stepped back . in order for the Congress to become aware of itself as a whole. Instead of scheduling events for the following day or thereafter, it was simply agreed that one person would « focalize » a general meeting, if sufficient participants gathered together in the plenary meeting room on the following morning. It was agreed that even the registration desk would be manned in an unscheduled manner by volunteers responding to the need. Such volunteers explained the change which had occurred in case participants did not wish to register. The workshop sign-up sheets were to be removed from the display wall. Once this decision was reached there was truly amazing expression of joy amongst those who had been responding frenetically to artificial pressures and needs which did not correspond to the values which had brought them together in search for new structures and processes. The « organizing group . dissolved itself with statements such as : « At last we have a Congress » (3). The results of this decision are described elsewhere (see pages 271-276).

Strange Happenings

The previous section reflects only one level on which the Congress could be perceived. From first to last however it was a focus of many strange happenings — perhaps the strangest being that it occurred despite the confusion from which it was born. The printed program carries the statement : « Newly arriving delegates all have stories of self-sacrifice, curiosity and faith in coming to Florence ». It was accepted by the original organizing group, which at

times barely had funds for its own food, that : « Because of the ad hoc nature of the group of people working on this Congress and because of the spirit of the event itself, we have discovered that we could only receive that which we truly needed at any time and no more. These contributions of energy and vision, and gifts and loans of money were given from one person to another with a sense of personal trust and a hope for the common good ». At times participants seemed to have come together mysteriously and magically « because they thought they ought to be there », despite (or even because of) the lack of precision as to the nature of the Congress. The variety of participants was quite astounding. There were : architects, physicians, healers, agriculturalists, artists, poets, dancers, biologists, disciples of a variety of sects and religions, psychologists, economists, educators, psychotherapists, historians, organic / whole food experts, intellectuals of a variety of persuasions (interested in sophisticated models of structures and processes), engineers, journalists, futurologists, philosophers, company executives, home-makers, members of communities of various kinds (e.g. Findhorn in Scotland), students, etc. However, despite this variety, participants were accepted and assessed on the spot as individuals, irrespective of their origins, occupations and roles which were seldom identified. To add to the strangeness, there was an actor who (as part of the film production) demonstrated the role of the fool or clown in such gatherings. There was a street « soul dancer » (with a Harvard degree) who functioned as « court jester » — most admirably — clarifying brilliantly those points which occasionally needed emphasis, responding to moments of tension and representing in many ways the soul of the Congress. (Has this ever before been permitted and welcomed in an international plenary assembly ?) As might be expected there were also musicians, jugglers and magicians of various kinds. Needless to say the date of the event had been selected by astrologers, who were also present. The setting of the meeting also contributed to the atmosphere. It was opened in the Palazzo Vecchio, once the centre of government of the Florentine Republic and now the city hall. The Congress was held in the Forte Belvedere — a huge construction with walls many feet thick in a star formation, built by the Medici at the beginning of the 17th century. This is located on a direct line between the Torre di Gallo (at Arcetri above Florence where Galileo carried out much of his work with the support

of the Medici) and the Duomo cathedral in the centre of the city. It is overlooked on the opposite side of the Arno valley by the town of Fiesole, a chief city of the Etruscan confederacy dating back to the 8th century B.C. — later superseded by Florence. The setting was used to point out the synthesis between the sciences and the arts which was a concern of the Congress. Many strange large-scale tubular "crystals" were created on the surface of the Fort to aid those interested in "infratizing" their awareness (4). Collectively they bore a striking resemblance to the array of antennae at the Arcetri Astrophysical Observatory next to the Torre di Gallo.

In this atmosphere participants quickly established contacts based on mutual trust and affinity. The level of tolerance and mutual acceptance was necessarily high with such a variety of people and interests. In many cases this was reflected in casual gestures of affection between people who were virtual strangers by normal standards. This supportive environment made it possible, for those who wished, to speak of their emotions or with tears in their eyes (even in plenary sessions). This occurred on a number of dramatic occasions and was accepted as a valid form of expression.

It is characteristic of the Congress that many participants experienced pain or discomfort in one form or another whilst there. Some had considerable transportation-related problems in getting there. Others suffered from odd physical pains. Many suffered emotional mental pain and frustration from the clash between their expectations and the realities of the Congress process. Egos were « crushed » and it was accepted by the core group that to succeed they would individually have to « get out of the way » of what needed to be achieved. Anyone who clung desperately to a particular structure or approach suffered. It was generally recognized that such experiences were beneficial. This meant however that each had to justify his or her own continued presence and contribution, since the support of others seldom matched the discomfort experienced. The Congress was also experienced by many as a process of joyful personal transformation, whether accompanied by strange coincidences, symbolic dreams, visions, or personal re-assessments. Quite unemotional people openly declared that it had provided them with some of the most meaningful experiences they had encountered. The variety of elements ensured that the Congress was a « complete experience » normally inaccessible to most because of habitual behaviour patterns.

(3) The nature of the group's attitude to this decision at the critical moment it was taken is illustrated by the Zen tale told at that time : Three disciples of a Zen master were each asked to explain his nature of a beautiful ancient vase. The first and the second were each absent a year and returned with complex statements — which were rejected. The third smashed the vase with one blow — and thus achieved "satori" .

(4) D.G. Langham. Genes: an attempt to develop a conceptual model to synthesize, synchronise, and vitalize man's interpretation of universal phenomena. Fallbrook, Aero Publishers, 1969.

(5) G. Lock Land. Grow or Die; the unifying principle of transformation. New York, Dell, 1973.



The fool : an enigmatic catalyst

- The fool, who was sitting beside the fire, heard these words, leapt to his feet, came before the King and skipped and danced for bliss, saying: "Lord King, so God save me, your adventures now begin."

The « Court » Jester and « Foolishness »

The court jester, the clown, the fool or the buffoon, is a mythic figure representing the inversion of the powers of the king (as the possessor of supreme power) - or as his alter ego. He is therefore often the victim chosen in folklore as the substitute of fool for the king in rites whereby the people respond frankly and unceremoniously to such powers.

Court jesters were first recorded in the courts of the Egyptian pharaohs and were in vogue up until the 18th century in European courts, salons and taverns (*). They were often physically misshapen, if not also psychically disturbed. Ideally they were a powerful reminder of the distortion of the human condition - more immediate than the photographs disseminated via the media of today. Additionally, due to the freedom from censure and responsibility for their actions which they were accorded, they were able to mirror, parody and mimic court situations in such a way as to bring out truths which would otherwise be collectively and carefully ignored. They were often masters of song and dance, and could be a dramatic foil to pomp, superficiality and falsehood of any kind. As an ambiguous and often androgynous figure, the jester could function as a powerful social catalyst - for good or for ill, depending upon the response of those by whom he was surrounded.

The fool is an enigmatic symbol of the point of crisis when the normal or conscious appears to become perverted or infirm, and in order to regain health and well-being is obliged to turn to the dangerous, the irrational, the unconscious and the abnormal. As such, the fool is to be found on the fringe of all orders and systems, outside all conventional categories, processes and social rules. He is the bridge between the conscious and the unconscious (and between the attributes of the right and left hemispheres of the brain) - a reminder that, after having failed in our effort to order and understand the universe in the light of our intellect and instinct, there nevertheless remains another way.

eliminating the jester from the court is as risky as allowing him to play his role. For, if « foolishness » is not given a channel through which to express itself, it seeks its own channel anyway. Parliamentary and international assemblies, particularly those in which each is conscious of the high purpose and seriousness of his role, run a considerable risk of incorporating distortion into their proceedings and results because of an inability to accept what a jester would reveal. (Political cartoons offer a partial remedy, but they lack the significance of being accepted as part of the proceedings and the have little effect on them.)

It requires greater maturity on the part of all participants, especially the chairperson and principal speakers, to play their parts in the face of such instant feedback. In the absence of children at international assemblies, who can say whether our international emperors wear any clothes?

Joker : messenger from the unconscious



Congress storyteller... Brother Blue



Congress « soul dancer »



(*) John Doran. History of Court Fools. London. Richard Bentley. 1858 Barbara Swain. Fools and Folly during the Middle Ages and Renaissance. New York, Columbia University Press. 1932. Enid Wellford. The Fool; his social and literary history. London, Faber and Faber, 1935.

However, it is viewed, the Congress contained many of the elements from which myths are made and in some ways engaged itself in a myth-making process — if only because of the many ways in which it can be described and the lack of any written record.

Harmonies of Dramatic Process

One contextual thread which was voiced on a number of occasions was that the Congress as a whole was a transformative process. In fact the stages of this process, derived from a synthesis presented there (5), were over-printed on the program distributed to participants. The succession of phases were labelled : accretive, replicative, mutualistic and transformative with each blending into the next over 2-3 day periods within the 10 days of the Congress. And indeed, even in the depths of crisis, it did appear as though the process was « on schedule ». (in the accretive phase there is an accumulation of elements with similar characteristics. In the replicative phase, there is growth by influencing other elements to take on the form of the initiator. In the mutual growth phase there is reciprocal interaction between the elements. The transformative phase establishes a new system of order from which the sequence can be repeated at a new level.) But aside from the intellectual overview of the process, there was also an understanding among many that the moments of drama, of takeover attempts by different individuals and factions, of expressions of anger and mutual accusation, of leadership abdication, of ultimatums, etc. were all integral elements in a real and meaningful process. As the proceedings evolved, it was quite beautiful to observe how « incompatible » factions in the Congress played off against each other or united in strange and moving harmonies. This occurs to some extent in most meetings but the variety of modes of expression considered valid on this occasion was

Harmonies within complexity



Photo : Richard Mack

unique. A plenary session which can move fluidly between : verbal exchange (whether intellectual or emotive), affective display, physical expression (as dance, movement or mime), ceremony and meditation, at any appropriate moment, is rich in dramatic possibilities particularly with a « court jester » as catalyst.

It is only in terms of dramatic process and interplay that excessive enthusiasm or negativity could be appropriately handled and channelled by the Congress as a whole — for the structures which are conventionally expected to handle such energies were themselves called into question, constantly modified and subjected to criticism. The collective challenge was to refine and improve the drama from its crude initial forms to one which could blend together all the elements present into a new and meaningful whole. This should not be understood to imply that people and factions were playing artificial games with one another or that there was a lack of discipline of any kind. The dynamics were « for real » and reflected attitudes that were sincerely held or genuinely felt. Tears (but not hysteria), a sense of despair, frustration and exhaustion were all frequent phenomena and some left when they could stand no more. It was however accepted by others that the Congress process should provide a « crucible » within which the variety of elements could be blended and moulded into a « chalice » as an expression of the whole.

Feeding this collective awareness of a dramatic process were suggestions made by a number of people — towards the end of the Congress — that the process bore some resemblance to a breathing cycle (inspiration, expiration), to a succession of birth contractions, or to a nuptial ritual between « yin » and « yang » forces. There was a widely shared belief that the Congress was a birth process although any focus on what was to be born was avoided — an attitude of expectancy was created. Another understanding, shared to some degree, was that the Congress process was a double reflection : (a) of processes between similar factions, forces

and viewpoints in the outside world, and (b) of processes and attitudes held in different ways within each individual present, especially including oneself. To observe the process was therefore to observe both oneself and society as a whole. Any struggle for a greater harmony in one was seen as reflected in the others and reinforced by them. This made the Congress experience triply significant as one responded to the battle and balance between the old and new forms and contending forces. It was suggested that the transformation of the Congress could then also be seen as a transformative process for oneself and for society as a whole.

Here-and-now Focus

It was also very characteristic of many who made the Congress happen that there was a definite willingness to focus on the here-and-now. An extreme instance of this was the number of people who had made no personal or professional plans for the period immediately following the Congress. They had risked much to make something happen in the present. As the Congress evolved and conventional planning was abandoned, participants were obliged to focus on a moment-by-moment reality. New program elements were scheduled at very short notice in response to the needs of the moment. All the usual features of a congress were constantly called into a question, whether deliberately or through the lack of importance attached to them. Participants were encouraged to be self-reliant, to improvise and to take initiative if there was something they specially wished to achieve (e.g. give a workshop, show slides, etc.). In such a context it may well be asked what prevented the Congress from falling apart (or exploding !). The answer lies in the level of mutual trust, whether intuitive or affective, which by-passed individual differences and the lack of explicit consensus.

(For a detailed report on the consequences of the organizing group's decision to stand back, and on the process evolved by the plenary group, see pages 271-276).

Emergence of integrative processes in a self-reflective assembly

Introduction

At a congress with rather unusual characteristics (see description, page 266) the organizing group decided to stand back and thus oblige the participants in plenary to make the quantum leap in attitude from being there to be served passively by the organizing group to being, making and evolving the Congress themselves as a conscious whole. The consequences of this dramatic decision and the processes which were elaborated in plenary are described here.

Self-reflective plenary : Unity

This section reports on the consequences of the decision by the organizing group to « stand back » and allow the Congress to take care of itself. On the morning of the fifth day, participants gathered in a plenary session for a discussion which lasted some nine hours. The early hours of the discussion were filled with exchanges and complaints, often bitter and emotional.

One major theme was whether the Congress should be tightly structured with a significant proportion of the time given to lectures by the key resource people, and with much of the remainder devoted to workshops by other resource people. A strong response to this was that it amounted to a « consumer » approach - denying the importance of participants as resource persons in their own right, and reinforcing conventional structures which it was the purpose of the Congress to call into question. The point was whether the participants had come for a safe, low-risk, pre-packaged (« super-market ») experience (1) — which was often available in their home towns, in books or at other events — or whether they had come to work collectively towards new approaches, however painful the experience.

(1) International congresses have always been recognized as intimately related to travel and tourism. The point has however never been made that since the congress program items themselves — panels, presentations, etc. — constitute packaged « trips » (to use the jargon of the

Itself be conceived as a collection of intellectual and emotional tours amongst which participants are free to choose. A congress may thus be seen to be related to the packaged tour industry both in reality and metaphorically.

(2) There is of course much experience of the behaviour of small groups (6-15 people) in unstructured situations, since this is an integral part of sensitivity training, encounter groups, and the like. In which many of

During this session, for the first time, people stopped holding back critical comments in public. Things that needed to be said were said and the responses, often very moving, resulted in integration of the group rather than fragmentation. There emerged a sense of shared reality — even if that reality was painful. It became less appropriate for a participant to stress his or her personal wants and frustrations rather than those of the group as a whole, or some significant part thereof. The session itself was held under considerable pressure from those who believed that « talking » itself was a sterile activity and a waste of time. Frequent proposals were made to have lectures or workshops, to switch to an alternative mode of expression (e.g. dancing), or to counteract the analytical divisiveness by affective displays or meditation. One response to these was they amounted to « cop-outs » and an inability to face up to the collective reality and the tensions inherent in it. Another, in the case of workshops, was that they fragmented the group as a whole and prevented it from coming to any understanding of its *raison d'être* or how its action could be improved. Handling differences by dividing into smaller groups is a standard practice in society — it results in mutual alienation and the inter-group conflict with which the Congress was concerned in attempting to reflect a greater whole. Another response, in the case of alternative modes of expression, was each such mode alienated some of the participants without responding to the problems of the whole. The paradox that the « talking » mode was equally alienating to many was also recognized as part of the Congress reality. Another theme was that of responsibility, given that the organizing group had eliminated themselves as authority figures providing a packaged experience to be consumed by participants. Every proposal that this or that should be done was met by the questions « Is

there consensus ? » and « How do we as a group propose to go about it ? » > The Congress was increasingly forced to be aware of itself as a whole and to take responsibility for itself as a whole — including such matters as manning the registration desk. The argument that the real business of the participants was to obtain or share insights in workshops or lectures was strongly countered by the point that the real challenge was in the nature and activity of the whole in the light of whatever participants had already learnt from such partial experiences on past occasions. Postponing such a collective awareness was viewed as avoiding the challenge. By this time it was remarked that the group as a whole at last constituted a « We » rather than a bundle of « I's ». The group was prepared to ask what « we » wanted and why « we » were there. It was recognized that the Congress was now on unknown territory since no diverse international gathering of such size had placed itself at risk in this way before (2). The group felt it had to feel its way forward, improvising at each stage, to see whether anything creative could emerge from the process. For some experienced congress-goers this was an excitingly unique experience.

The sense of immediacy and moment-by-moment reality provided a « collective central space » — an eye in the hurricane — from which the Congress processes could be sensed. To the extent that the space was a vacuum of non-action, there was great pressure to fill it with any kind of activity. The nine hour session terminated without however taking responsibility for the following day and without a sense of the possible evolution of the Congress. For some this continued refusal to confront the collective reality — despite what had been achieved — represented merely a further stage in the process.

(3) Response to the above from the focal person of that group : « It was imperative that we demonstrate something larger than « good feeling » and « we-ness » to have resulted from the previous day. I don't deny that we thereby removed some of the creative tension from the plenary, nor that it grasped hungrily for something resembling a programme by which to constitute itself, short of achieving the same objective itself — in the course of which it could have extended its sense of « we-ness ». But I feel that given the prevailing state of affairs, general mood, etc. there was a good chance of total disintegration occasioned by the general unwieldiness of the plenary mode of functioning. I also felt that it was important to clear the air of expectations, resentment and frustration, so we could get on to dealing with higher orders of substantive integration — which is what I feel began to happen two days later ».

Reaction and Premature Synthesis

The tension of collective self-awareness and the "space" which it created could not be maintained. On the sixth day, as a reaction, the program was tightly and conventionally scheduled (by a small group which took this role upon itself without the general consent) — lectures in the morning and early afternoon, followed by workshops (3). The latter were however held in the same large room to avoid the sense of fragmentation, and then reported back together as a plenary assembly. The sessions were a relief to many who felt that a meaningful synthesis had been achieved between structure and process. The general atmosphere was very positive. The workshops contributed to this sentiment until the reportback procedure highlighted how unearthing were the insights which emerged — despite the assembled expertise — and how the problem of interesting them meaningfully and usefully remained to be confronted. It was then agreed that the experimental approach of the previous day should be continued in plenary.

Despite the consensus of the previous day, a small group again took the initiative to schedule (the Sunday) with a morning plenary session of meditative celebration, poetry reading and Renaissance dance. After a short period this was abruptly broken up by a series of protests which re-opened the issues which had been raised on the fifth day. A very powerful debate ensued with many eloquent speeches. The first point made was that whatever its aesthetic, inspirational or celebratory appeal, the proposed program reinforced attitudes which had already been proved inadequate to the challenge of the times. As such it was in many respects a hindrance in that most of what could be learnt from such activities had already been learnt. A second point was that time spent collectively in respectfully absorbing further inspiration, or insightful information, diverted attention and effort from actually engaging in transformative activity. As has been said before, collectively we know most of what we need to know — except how to act collectively in more appropriate ways. Any focus on how things could or should be done, on why they should be done or on the beauties of action appropriately performed, merely prevents the group concerned from confronting itself in the here-and-now. It postpones all activity, if any, to the elsewhere and elsewhere. The point was also made by some that they were there to work together collectively and not simply to consume the products of New Age initiatives. The contrast was made between the Con-

(3) See footnote previous page.

(4) Lionel Kreeger (Ed). *The Largo Group: dynamics and therapy*. London, Constable, 1976 (eummarizos current understanding but with apparently little relevance to a conference-type situation).

From group consciousness to conscious groups

• It is useful to distinguish between (a) the awareness individuals may have of the group of other individuals with whom they interact, namely « group consciousness », and (b) an awareness by a group as a whole of itself and its activities, namely a « conscious group ».

The first is necessary to enable individuals to respond appropriately to each other within a group. The second arises when the individuals are collectively and simultaneously aware of the pattern of those interactions between the group members.

• Little is known about conscious groups and what they could achieve. There are clues in the statements of members of a football team who are instinctively aware of one another's movements. The same may be said of an integrated dance troupe. But such examples are purely physical. How would it be to participate in a group which was physically, emotionally and mentally attuned? Statements from members of some commune-type groups suggest that they are moving in that direction.

• When learning to ride a bicycle, we have to deliberately correct excessive responses in order to maintain balance - until such correctional moves are made instinctively.

In a conscious group, excessive responses resulting in energy disequilibrium are also smoothly corrected by an integrated response within the group - whereas this would normally only be achieved through a series of sporadic procedures, characterized by a heated mix of rational and irrational argument and expression, leading to changes of an almost spasmodic quality.

• Consider the clues implicit in the following description of an experiment in avant-garde music:

« Correspondences are based on the principle of mutual psychological reactions and attempt to « join » the four participants with each other and to make them increasingly dependent on each other. There are four levels:

1) The musical material is entirely fixed, but the choice of instruments is left open.

2) Each musician possesses only incomplete instructions. In order to be able to play, each musician must search for missing material in the performance of the neighbour (pitches from the first, length from the second, etc.), and react to it in different ways: imitate, adapt himself to it (if need be further develop), do the opposite, become disinterested or something else (something « unheard of »).

3) The composed material is completely substituted by the description of the possibility arising from the reactions of the performers to their neighbours.

4) On the last level, it is left up to the performers whether to cease playing or to continue: for not even the selection of reactions is now necessary ».

(Vinko Globokar, *Drama and Correspondences*. Harmonia Mundi 20 21-803-1. Comment on recording).

• A sign of the emergence of a conscious group - from the point of view of anyone involved - is that each is moved to act in the right way at the right time, although there does not appear to be any central coordinating agent or any explicit design. The actions of the whole are very much greater than can be comprehended from the individual actions. How each awareness interpenetrates the others is not yet clear. The « eyes » do not understand how they are related to the « feet » or the « hands », and the right and left « feet » do not understand how their movements harmonize through their opposition to each other (a yin-yang cycle) to move the body forward. A similar situation arises early in the growth of a child.

• The prime characteristic of a conscious group is its awareness of itself and its place and rhythm in the scheme of things. Within itself it mirrors an awareness of how its environment is organized. Each action on the environment is paralleled by an equivalent displacement of energies within itself. There is a « magical sympathy » between the outer and the inner worlds. It is through this inner / outer attunement that the group is able to increase considerably the amount and range of energies that it can handle and focus in order to transform itself and its environment as it evolves into a greater identity.

Participation in a conscious congress would be a dramatically uplifting experience. But how are we to allow our instruments to respond in their respective ways to the tune which enfolds us? And how would it be if such a congress interlinked a number of conscious groups, each attuned to a particular aspect of the whole?

(Extrait from a Congress document) •

gress as a supermarket for participant-consumers and the Congress as a work-site for the construction of a cathedral, whose nature had still to emerge. Counter-arguments were made that the individual of today is a crippled being requiring care, that generations are required for anything significant to be achieved, and that significant social transformation could anyway only be achieved through personal transformation. These views were forcefully rejected (with the aid of three deleted expletives) as « cop-outs » justifying collective inaction by those present and as placing self-inhibiting limits on the creative ability of the Congress.

The session had now come to a point of explosive desperation not knowing how to reconcile the fundamental polarities of plenary vs small group format and intellectual ("talk") vs experiential

action, in the light of what had been discussed.

Such is the lack of creative self-confidence, there is a widespread belief that such polarities cannot be reconciled. A proposal was however accepted to attempt, in a plenary session on the following day, to apply a small-group counselling technique to the plenary group in an effort to heal the group creatively.

Self-reflective Plenary : Harmony in Diversity

There exists a wide variety of techniques to promote individual transformation within groups of from 5-15 people. A great deal is known about the behaviour of small groups. Very little is known about groups of more than 25 people, and yet groups of this size are frequently encountered in meetings of all kinds (4). Often larger groups (such as the Congress) fragment naturally into smaller groups having some shared characteristic or affinity. Such smaller groups each acquire their own "per-

sonality > within the larger group and the interaction between such smaller groups creates many problems and creative possibilities within the larger group. The unexplored question is whether any of the small group techniques can be used within a large group to promote the transformation of its constituent smaller groups (namely small group transformation replaces the usual goal of individual transformation — and the group consciousness sought is an awareness of the larger group as a whole).

One small group technique, itself a synthesis of methods used in China and the USA, was adapted as follows by the plenary session after some discussion.

Round I : Some 24 smaller groups were distinguished as contributing significantly to the dynamics of the larger group. Provisional labels were made out with identifying key terms (see box). These were laid out in a circle within the concentric circles of participant chairs. Participants were asked to determine with which groups they felt some special affinity (5). Those identifying with each group in turn were then asked to stand up and a spokesperson for the affinity group was asked :

— What were the special qualities of that affinity group and what did it contribute to the larger group as a whole ?

— What were the major challenge areas of the affinity group to improve its contribution to the larger group as a whole ?

Other members of the affinity group could supplement the responses to these questions.

This process gave all concerned a better awareness of the distinct contributions made by each affinity group and encouraged each group to clarify the nature of its shortcomings. This Round was successfully completed by the plenary group. It was clear that some of the affinity groups were not especially aware of their shortcomings. Some of them also considered themselves as the « most important » of the affinity groups.

Round II : The exercise is repeated in a second round in which a spokesperson for each affinity group informs each other group of how they are each perceived by the spokesperson's group. In other words the spokesperson answers the above two questions for each other affinity group, identifying the qualities and shortcomings of each. This process gives each affinity group a greater awareness of which of its

Affinity groups at the Congress

1. Original organizing group
2. Structure-oriented group (i.e. favouring adherence to a predetermined programme, with emphasis on lectures and workshops by key resource people)
3. Process-oriented group (i.e. favouring flexibility with emphasis on all participants as resource people)
4. "Super-class" resource people (i.e. those who participated with the intention of giving a lecture)
5. "Middle-class" resource people (i.e. those who participated with the intention of giving a workshop)
6. Lecture attenders (i.e. those specially in favour of lectures by key resource people)
7. Workshop attenders (i.e. those specially in favour of workshops)
8. Detached observers (i.e. those uncommitted to the ends of the Congress)
9. Floaters (i.e. those drawn to a variety of experiences)
10. Movie makers (i.e. the group producing the film on the Congress)
11. Visionary instigators (i.e. the group concerned to ensure that something new and significant emerged from the Congress)
12. Psychotherapists and the like (i.e. those concerned with personal and spiritual development through some form of counselling)
13. Movement, dance and performer group (i.e. those oriented towards non-verbal expression and its personal significance for group integration).
14. Whole-earth, organic food/health group
15. Mediator group
16. Intellectual modellers (i.e. those intent on the possibilities and fruits of conceptual synthesis)
17. Non-anglophone group (i.e. those who were handicapped by an inadequate knowledge of English)
18. « American » group (i.e. 31 participants travelling as a group and isolated in a distant hotel)
19. Kitchen voluntary worker group
20. North-American Indian group (i.e. those wanting the Congress to act in response to the native American crisis)
21. « Action-new » group (i.e. those wanting to act immediately and to stop talking)
22. « Here-and-now » group (i.e. those impressed by the immediacy and "rightness" of the present and the lack of pressure to act)
23. Artists and visualisers
24. Educator group

qualities are appreciated within the larger group. It also exposes it, gently, to feedback on the matters on which it is insensitive (and to which it is never likely to be exposed under normal circumstances). It helps to clear many of the blockages to inter-group interaction within the larger group. And it does it by providing a supportive context for exchanges which in a larger group are conventionally at the primitive level of « Our group the best... Your group very bad » (as had already been experienced in plenary exchanges. There" was unfortunately no time to undertake this round within the plenary session although it would, seemingly,

have provided the needed breakthrough to a new level of integration within the larger group — one which would be respectful of diversity (6). Round III : Further rounds were envisaged in which affinity groups exchanged roles to enable them to obtain a greater understanding of the domain in which each other group operated. (In the case of individuals, one form of this technique is known as psychodrama). Round IV : Some of the above affinity groups, which are most evident in the initial dynamics may, after several rounds, prove to be somewhat superficial. The exercise can then be re-

- a A participant could well be part of several such groups.
- b Possibly some preliminary exercise could have been used to reduce the number of labelled groups (e.g. to 5-15, corresponding to the viable number of individuals in small group processes). The labels could have been located in relation to the chairs in which each small group was located, provided that participants
- d Each affinity group is often aware of its members as a result of prior interaction within the Congress framework. A refinement would en-

courage use of the original technique with the individuals of each small group either prior to or following this process. e Each small group could collectively re-assess its identity as symbolized by the terms on the label. Ideally the label should be revised, possibly to include negatively loaded descriptors as its negative characteristics are highlighted by the process in the larger group. Labels may not be necessary, however.

- (6) The pattern of appreciative and problematic interactions could usefully be represented on a large wall chart open to annotation by participants.

peated with new affinity groups considered to be more fundamental or more relevant to the collective purpose of the whole as it emerges. At this stage the pattern of tensions between the affinity groups becomes a collective reality which can be worked with to stabilize disequilibria and unfocused exchanges within the larger whole. This procedure represents a compromise both between small and plenary group processes and between verbal, analytical and experiential processes. Experiential skills previously only applied to small groups are applied both within the affinity groups and within the larger whole — in this way feeding back specialized expertise normally restricted to small groups. Ideally the attempt could be made to apply a wide variety of small group skills to the larger whole with the object of progressively transforming the relationships between affinity groups within it. Answering the direct question of what any affinity group contributes to the plenary group ensures a collectively focused awareness of the varied nature of such contributions and their special relevance to the dynamics of the whole. This eliminates the triviality of token contributions normally characteristic of small group feedback to a plenary body unable and unwilling to integrate such input in any meaningful manner. The plenary group in this way engages in a "self-healing" process (which, as it was expressed at the Congress, « helps to get the crap out »). It is well-recognized in psychotherapy that the ability to permit and to handle negative feedback is an essential indicator of the maturity of any individual and equally of any group. By permitting such feedback the process facilitates the maturation of the affinity groups (7) and of the larger whole. A great deal of creative energy emerges from an appropriate stance in response to negativity or, more precisely, in responding appropriate stance in response to negativity ting tendency. And essentially this is what the process achieves, namely a dynamic equilibrium between a variety of polar opposites — a balance of dualities which defines a central space or position from which the group can act creatively, with focused energy, as an integrated self-reflective whole.

Conceptual Synthesis

A deliberate effort was made by the initial organizing group to use the occasion of the Congress to bring into focus the interrelationships between a number of unique and little-known conceptual models. These « universal » models are characterized by the wide range of phenomena which they attempt to encompass and the manner in which they draw insights from a broad

range of disciplines, often including natural and social sciences and even arts as well as sciences. Some of the originators of such models were present at the Congress, two were directly represented, and others were collectively represented by people working on the interrelationships and isomorphisms between such models (a preoccupation which, unfortunately, the model-builders themselves usually do not share for obvious reasons). The last occasion on which such a synthesis was attempted was in 1969-1971 in association with some members of the Society for General Systems Research. The models were presented in lectures and workshops and their synthesis is partly documented in the Congress film (see footnote 1).



Buckminster Fuller

The significance of this initiative is that (a) the Congress provided a forum within which such syntheses could be presented, (b) it ensured a unique confrontation between such intellectual approaches and the affective, artistic, spiritual and experiential approaches hitherto characteristic of the « New Age movement », and (c) applications of two of the models were used to provide integrative guidelines for the Congress process itself, thus linking theory to social reality.

Conclusion

A congress of this kind is many things to many people. Many descriptions, evaluations, explanations and interpretations can be projected on to it — and this document may be more selective and biased than others. Only the future may be able to tell, from the consequences of the Congress, what weight

to give to particular factors. But having participated in the event and its processes, a significant number of experienced meeting-goers now recognize that many conventional meetings are a sterile, unproductive bore in comparison. Summarizing its unique achievements, the following may be noted :

1. Individuals of a very wide range of preoccupations and persuasions (both famous and otherwise) were brought together, by-passed their usual lack of mutual credibility, and worked together in a mutually beneficial manner. A unique « space » was thus provided for incompatible elements to interact integratively.
2. The organization of the Congress was self-consistent in responding within itself to the issues raised by the need for new social structures. The Congress was self-organized, participant-run and staffed. Elitism was severely restricted by the Congress processes without destroying orderly process. Participants were prepared to place everything at risk in order to ensure the emergence of more appropriate modes of organization. The Congress demonstrated that such modes can emerge with direct consequences for the smooth organization of its own processes.
3. Resource people, and those anxious to structure other people's awareness, were placed on the defensive. They were obliged to seek ways of making their contribution to the whole without distorting the collective process for the purposes of individual ego-nourishment. A new mode of congress behaviour was clarified.
4. A core group of people, who had personally risked most, were taken by the process they initiated through a very rapid process of transformation as a group. Many other participants reported significant personal transformation. The value of the process, as a « complete experience », whether personally or collectively, is itself adequate justification for holding the Congress.
5. What was achieved was done with a derisory amount of funding and a preponderance of quite "ordinary people". Ironically, it could probably not have been achieved with generous funding or with "better qualified" or « more effective » individuals. (It was the well-armoured dinosaurs that failed to survive the evolutionary crisis, not the mammals scurrying between their feet).
6. A triple synthesis was effected (with joy) : (a) in physically gathering together and blending harmoniously a uniquely diverse group (point 1), (b) in engaging experimentally in a process it originated which brought into focus and balanced the dualistic forces within the group, thus opening the way to structured development of large group collective self-awareness, and (c) in interrela-

(7) Which are "sub-personalities" of the larger whole according to the terminology of transpersonal psychology.

ting a variety of conceptual models and demonstrating their use in the Congress own processes. 7. A creative impetus was established in many of those most centrally involved whose consequences may well be evident shortly in a variety of forms, notably innovative social organization.

As a contrast to its successes, the failures were mainly associated with the time taken to benefit from the preliminary stages of the Congress process and with resistance to that process. Had less time been spent on the early difficulties, the Congress would have had more time to build on the point of balance it reached in its closing period. Fewer people would have been unne-

cessarily hurt. In addition, part of the synthesis achieved was implicit rather than explicit because of the time factor. The challenge raised by the Congress is how to build on its achievement — given that part of its success derived from the variety of opposing tendencies represented (as a result of the confusion surrounding it prior to the event).

Could such an event be repeated, how, and by whom? — given that part of its success also derived from the ability of the organizers to terminate their responsibility. Finally, the real test of a Congress on social transformation is its ability to transform its own structures and processes — using itself as a laboratory — and to provide meaningful personal transformation for those who participate.

Failing which the Congress resembles the preacher in the following tale :

" In a small Welsh village the preacher great length on the evils of alcohol consumption. The preacher himself, however, was often to be seen incapacitated by alcohol although none of the village adults dared to comment. One little boy did ask about the seeming inconsistency, however. The preacher responded ; " My boy it is very simple, i am, a signpost but not the way " Many Congresses produce splendid signposts (recommendations, declarations, reports etc.) Maybe this Congress established a way.

Speculative Postscript : Where's the Cathedral?

It was suggested above that a purpose of the Congress was to build a cathedral (rather than function as a supermarket). If it was a success, where one may ask is the cathedral? Although one can always find what one wants to find, the following argument does open up some interesting lines of speculation.

What is a cathedral? The gothic cathedrals were conceived as an enclosed space to facilitate human transformation within the community. The architectural elements were deliberately selected and harmoniously blended in order to catalyze this process — in whatever manner people wished to respond to it. The design deliberately incorporated and interrelated features corresponding to stages in that process. Typically such cathedrals had two towers at the entrance as an indication of the necessary balance between the primary dualities. And the space itself was defined between the pairs of pillars corresponding to secondary dualities, and lighted at each level by reflection through corresponding images. Within the entrance lay a large circular labyrinth lit by a rose window of the same dimension.

So what has this to do with the Congress? It has often been stated in other words that the many factions and schools of thought that make up society act in relation to one another and to the whole as though they were all lost in a complex labyrinth. The Congress process conducted such diverse groups

through such a labyrinth as through the dance positions of a roundelay or a ritual circular movement. This psycho-social or behavioural movement, "bypassing ego-centrism," gave a sense of the plenary as a self-reflective unity — as does the dance, implicitly. But unless there is further progress, insights as to any corresponding physical or social architecture lack precision and are limited, to gross structures with few axes of symmetry, if any. Social unity is only provided organically at occasional communal celebrations and is poorly reflected in permanent structures. The energies of the society are essentially dispersed and unfocused. The plenary group did however progress to a new level, namely one in which it consciously recognized its unity through its diversity and through the harmony of the interplay between the opposing tendencies — with the consequent influx of creative energy associated with the focal point of balance. This stabilized understanding of behaviour in the labyrinth. The rose window, and its relation to the labyrinth, beautifully illustrates this level of perception and the manner in which it clarifies the nature of the transformative space. The corresponding physical or social architecture is carefully engineered (in terms of planes and axes symmetry) to reflect an overriding unidirectional or uni-functional perspective. This gives both an articulated sense of community and the sophisticated hierarchies by which it is developed and both have from the time of the Romans till the few

(8) The significance and interrelationship of forms in general, (including the labyrinth and the rose window) are explored in a film, shown at the Congress, by Keith Cotchlow and Lawrence Moore under a grant from the UK Arts Council (distributed by Concord Films Council, 20 Felixstowe Road, Ipswich, UK). The diagram shown on following page, based on the labyrinth is taken from a book by Cotchlow and Moore, entitled, *Changes Maze*, London, RILKO Trust, 1972.

20 Felixstowe Road, Ipswich, UK. The diagram shown on following page, based on the labyrinth is taken from a book by Cotchlow and Moore, entitled, *Changes Maze*, London, RILKO Trust, 1972.

Although the organic, wholistic circle is beautifully blended architecturally into the rational square (e.g. the gothic arch), this is only achieved by the skillful use of compression between structural members. The structure as a whole is dependent on the external overriding tensional force of gravity (or authority) to prevent it falling apart. It is not structurally self-dependent and its elements lack the freedom of tensional interplay which would permit the structure to respond appropriately to forces (or shocks) from any direction. Such structures are "natural" only to a limited degree because they fail to make use of constructional principles inherent in plants and animals, namely the appropriate balance between structural tension and compression — an animal can be rotated flexibly into any position without falling apart, but not a cathedral, or social organizations built on the same hierarchical principles (9).

Also active at the Congress however, were those working on isomorphic conceptual models and the synthesis they represent. At least two of these give rise to two-dimensional structures which were a focus for group activity. The question then is, are there new kinds of structure which can be used as a basis for new kinds of architecture, whether physical or social? To be superior to conventional architecture, they need to:

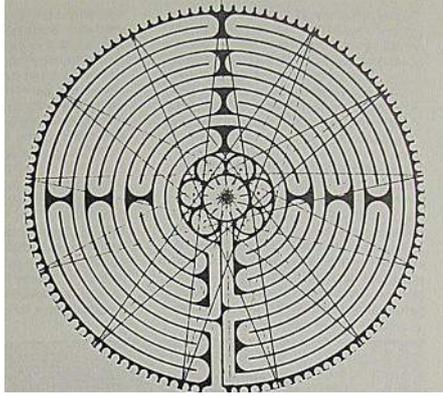
- require fewer materials
- be easier to construct
- be more stable under a wider range of forces
- be more isomorphic with corresponding conceptual structures of philosophic and social significance
- correspond more closely to the harmonies and economies of natural structure.

One set of structures presented, which fulfils these conditions, is known under the name « tensegrity structures ». They are best known through their architectural application in geodesic domes, although as usually seen they disguise the important principles underlying their design which are relevant to this argument and to the elaboration of corresponding social structures.

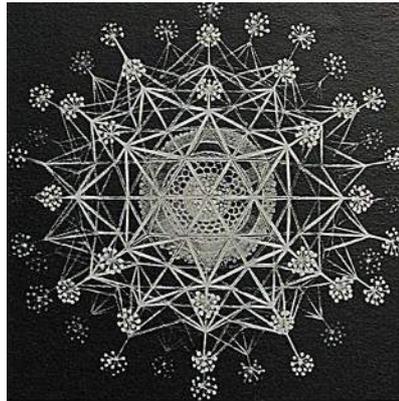
Returning to the Congress, aside from the limitations of the rosewindow perception already mentioned, the problem is that the interplay between the factional tendencies is obviously much more complex than can be adequately represented in a two-dimensional display. Such complexity can only be "captured" in a structure of matching complexity which does justice to the variety of interaction patterns. Tensegrity structures lend themselves admirably to this. Briefly, their advantages include: an elegant relationship between tension and compression elements, a more elegant solution to the relationship between the spherical and the linear, omnidirectional stability, and multiple axes and planes of symmetry. Translating these advantages into psycho-social terms, the interacting tendencies in a large group (for example) are balanced much more elegantly. The transformative space defined between the dualities is now focused at the centre of a sphere (rather than between rows of vertical pillars), whose shape is maintained by the dualities and by the network of forces which hold them in symmetrical relationship to one another, however they are oriented. Order is inherent and not externally imposed. Duality is balanced and transcended in structure which lend themselves to rational analysis whilst exemplifying the wholistic dimension by progressions through a complete scale of such structures. Symbols of appropriate psycho-cultural significance can be associated with them and as such they can be understood as precisely designed aerials tapping into archetypal energies. The key question is whether these clues can be used in practice to design new kinds of psycho-social structures which are more adequate to the needs of the times. A tensegrity structure could, for

*) " Class One of all history's domes is comprised of the hundreds of milleniums of old upside-down baskets which include the later evolution of baskets into boats and the re-upside-downing, once more, of boats to form the roofs of community meeting places and its later derivative the

cathedral" R Buckminster Fuller. *Ideas and Integrities*, Prentice Hall, 1963.



Labyrinth at Chartres Cathedral Drawing: Keith Critchlow (see footnote 8)



A lesson in structure from one species of radiolaria

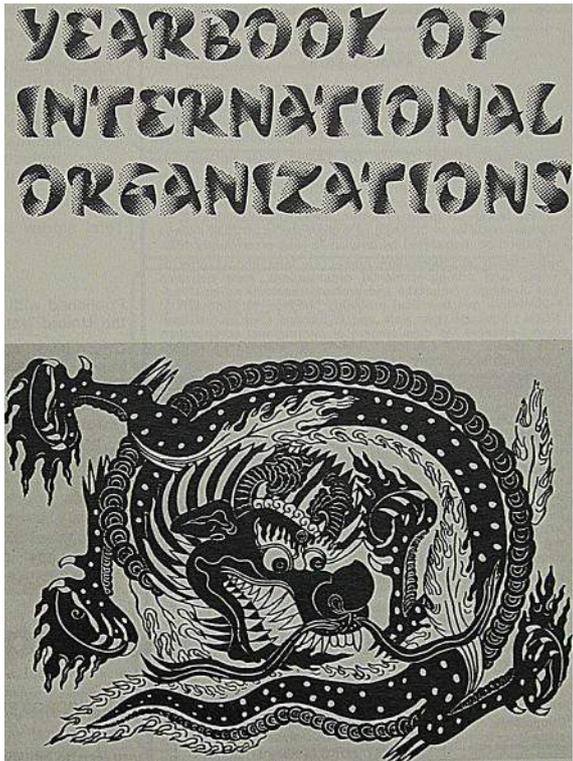
example, have been used to clarify the harmony within the plenary's diversity and to facilitate understanding of how energy could be moved, focused and used within the Congress in response to different initiatives (10). As to the cathedral, the Congress did not build one for they have largely served their function and a new type of structure is urgently required. The Congress did however create a central transformative space analogous to that in cathedrals and it did bring into focus the nature and significance of some new structures — perhaps best illustrated by a micro-organism of the order radiolaria (above), or by the concept of nested tensegrity structures. This establishes a basis from which the reality of the corresponding psycho-social structures can be explored (10).

(9) " Class One of all history's domes is comprised of the hundreds of milleniums of old upside-down baskets which include the later evolution of baskets into boats and the reupside-downing, ones more, of boats 10 form the roofs of community meeting places and its later derivative the cathedral " R Buckminster Fuller. *Ideas and Integrities*. Prentice Hall, 1963.

(10) A first step towards exploring this possibility is described in an article in this issue, pages 246

1978
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17



1978

TRANSNATIONAL ASSOCIATIONS, 5-1978 277

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YEARBOOK OF INTERNATIONAL ORGANIZATIONS

EXAMPLE ENTRY

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SG. Robert Fenaux, 1 rue aux Laines, 1000 Brussels. T. 511.83.56 - 512.54.42.
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Structure General Assembly (every 2 years), elects Executive Council of 12 for 4-year term. Individual membership limited to 250 and subject to election by General Assembly. Meetings closed. Staff 14 paid. Languages English, French. Finance Subscriptions ; sale of publications ; grants from official and private bodies. Budget for 1978 : 13,500,000 Belg. Fr. Consultative Status ECOSOC (II) : UNESCO. (B). Special ECOSOC resolution, 20 July 1950, establishing co-operation between UN and UAI for publication of *Yearbook of International Organizations*. On ILO Special List.
NGO Relations Linked with 500 international NGOs through the Corresponding Organisation membership category ; 3,000 others supply information.
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Congresses of International Congress Organizers and Technicians 2 up to 1961 ; Rome 1962. Copenhagen 1966. Barcelona 1970, Kyoto 1975. Seminars for staff members of international NGOs's Turin 1969, Milan 1972.
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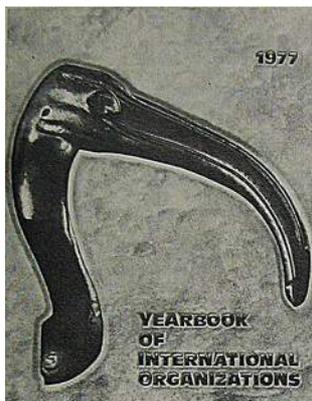
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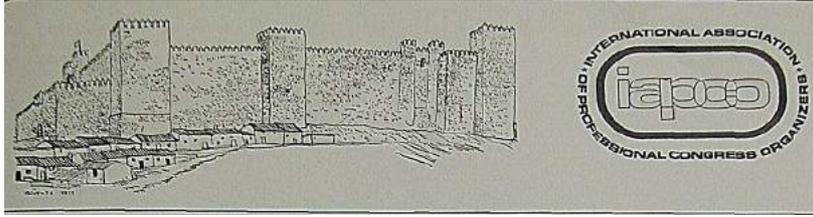
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The 4th IAPCO SEMINAR ON CONGRESS ORGANIZATION took place the 5th to the 10th of February 1978. It was again located in Europe; this time in the northern part of Switzerland at the Wolfsberg Management Centre of the Union Bank of Switzerland: a modern training centre housed in an old manor house. The beautiful Swiss landscape, the facilities of the centre and its efficient and pleasant staff provided an ideal setting for the IAPCO Seminar.

This 4th Seminar was structured with a programme very similar to previous seminars. Experienced experts led the discussion which dealt both with theoretical and practical aspects with emphasis on the latter. Modern audio-visual tools and methods were used, as a demonstration of their vast possibilities and to increase the impact of the proceedings.

35 participants from 15 countries attended the meeting: from Canada to Kenya, the Philippines to Yugoslavia, Brazil to Finland.

Participants were from different organizations and of various official capacities: they included Secretary Generals of international and national organizations, managers of convention centres, bureaux, tourism offices, chambers of commerce, airlines, and representatives of specialised departments within commercial companies and universities.

The various lecturers covered the following themes:

- definition of the professional congress organizer
- what does the organizer expect from his client?



- what does the client expect from the organizer?
 - minimum facilities required
 - languages problems re interpretation, printed matter and staff
 - administrative techniques and procedure, bookkeeping, allocation of hotel rooms, administrative data re chairmen, speakers, rapporteurs, etc.
 - computerization
 - international organization of an organizers office
 - some basic rules on the set-up and techniques of social events
 - finances, budgeting, pre-financing, grants, loan, etc.
 - promotion of the congresses
 - organizational aspects of the implementation of the programme
 - exhibitions as part of congresses.
- Three workshops enabled participants to acquire practical experiences in interviewing clients and practice in preparing promotion efforts, in drafting congress programmes and time tables and in establishing a congress budget.

At the end of the Seminar the participants were invited to give their evaluation of the various aspects of the meeting; their overall ratings were extremely good and encouraging for the organization of future seminars. The 5th seminar is already being planned and is due to take place in February 1979 somewhere in Europe. Further information will be given when available.

IAPCO also holds a meeting and an annual general assembly which are independent from the association's seminar and reserved for members. The 1978 meeting took place in March in the outstanding setting of the Parador Nacional Castillo de Sigüenza, North of Madrid (see the drawing heading this page).

After welcoming the new members: Magistrat Congress Department in Ljubljana, Yugoslavia and the Conference and Special Events Department at the McGill University in Montreal, members discussed during the three day

Participants at IAPCO's IVth seminar on Congress organization



assembly the various points on the agenda of the working sessions ;

- Fees and structure
- Marketing of congresses
- Dictionary of Conference terms
- Report on new US tax legislation
- Code of Conduct
- IAPCO network and cooperation between members
- Staff recruitment and training
- Evaluation forms for congresses.

For the first time, the association had invited certain representatives of various international organizations who are concerned with congresses, to attend part of the working sessions as well as a round table, during which future mutual relations and cooperation was discussed.

The guests of the association were :
Mr. Godofredo FIGUEROA, Chief Planning and Meetings Servicing Section, Department of Conference Services at the United Nations in New York; Mr. Geoffrey SMITH, President of the European Federation of Congress Towns; Mr. Georges CHANTREN, Vice President of the Union of International Fairs; Mr. Walter KESER, Former President of the International Association of Conference



Interpreters, who was accompanied by three interpreter members of AIIC. This special AIIC delegation was invited in order to enable an exchange of views on common as well as individual problems relating to interpreting. This meeting proved to be very constructive and the first steps have been taken towards positive cooperation between the two associations.

Also for the first time, IAPCO members were invited to participate in a Prize Award exhibition of printed matter that they had produced during the last five years.

Two prizes were given; one for the best combined set of congress documents and the other for the best individual printed item.

The Jury was composed of Mr. Figueroa, Smith and Chantren. The special Award was won by Sitecc in Madrid who produced the best set of documents and the prize for the best individual document was won by AISC in Rome who produced an extremely good « decision making » document inviting a given association to have its congress in Rome.

The IAPCO annual meeting terminated with the statutory General Assembly; the Elections for Council confirmed the mandate of Jorge CASTEX (Buenos Aires) as President; Fay PANNELL (London) Vice President; Christer CARLSSON (Stockholm) Secretary General, Juana BRAVO de LAGUNA (Madrid) and Bob MANSON (Dublin) as Council members. The Next IAPCO Assembly will take place in 1979, in Dublin, Ireland.

G. de Coninck

ARGUS DES CONGRES

DESTINE A TOUS CEUX QUI DOIVENT ORGANISER DES EXPOSITIONS
DES CONGRES OU DES SEMINAIRES, IL RECENSE PLUS DE
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18 th EDITION

INTERNATIONAL CONGRESS CALENDAR 1978

1978 May 2-6 Beirut
(Lebanon)
UN Economic Commission for Western Asia, 5 th session. (YB no B 4669)

ECWA, c/o Apt 1, Fakhoury, Building, Ardati Street, Manara Section, POB 4656, Beirut, Lebanon.

1978 May 2-12 Vienna (Austria)
UN Industrial Development Organization, Permanent Committee of IDB, 10th session. (YB n° B 3386)
POB 707, A-1070 Vienna.

1978 May 5-8 Poitiers (France)
Réunion annuelle des protistologues de langue française.
M J Schrevel, Laboratoire de zoologie et biologie cellulaire, Université de Poitiers, 40 avenue du recteur Pineau, F-86022 Poitiers.

1978 May 6-7 Tours (France)
3e Colloque int de phytothérapie et d'aromathérapie.
Dr Lapraz, Secrétaire général, 14 rue de Tilist, F-75008 Paris.

1978 May 7-8 Berlin (West)
Int Kongress : Nationale und transnationale Wahlerentscheidungen in der europäischen Geschichte • Zur Wahlerbewegung in den Ländern der Europäischen Gemeinschaft. P : 600.
Kongresshalle Berlin, John-Foster-Dulles Allee 10. D-1000 Berlin 21.

1978 May 8-12 The Hague (Netherlands)
Int Federation for Documentation, FDI/CCC-UDC/C3 « Social Sciences », 38th meeting. (YB n° A 1823)
FID, PO Box 30115, 2500 GC The Hague.

1978 May 8-13 Hvar (Yugoslavia)
Europhysics study conference on nuclear physics : The structure of lighter nuclei. P : 100 (inv).
Dinko Poanic, Institute Rudjer Boskovic, POB 1016, YU-41001 Zagreb.

1978 May 8-13 Warsaw (Poland)
Int Union of Architects, Commission « Exercice de la Profession », Groupe H, meeting. (YB n° A 2689)
SARP, Ul. Foksal 2, Warsaw.

1978 May 8-Jun 16 New York (USA)
United Nations, Committee for Programme and Co-ordination, 18th session. (YB n° A 3375)
UN, New York, NY 10017.

1978 May 12-13 Munich (Germany, Fed Rep)
Union of European Patent Attorneys and other Representatives before the European Patent Office, Executive Committee. (YB n° A 4527)

Dr Klaus Hoffman, Secretary General, Arabellastrasse 4, D-8 Munich 81.

1978 May 12-13 Paris (France)
Int Union of Architects, Groupe de Travail « Aménagements Urbains et Rural », Meeting. (YB no A 2689)
H Calsat, 65 boulevard Arago, F-75013 Paris.

1978 May 15-17 Istanbul (Turkey)
Conseil National Turc pour la Recherche Scientifique et Technique. Conférence : Dessin architectural.
Assoc. Prof Dr Nigan Bayazit, Dr Mine Ingeoglu, Mimari Tasarlama Kongresi, ITU Mimarlik Fakültesi, Teknik Üniversitesi, Istanbul.

1978 May 15-19 Rome (Italy)
FAO, Committee on Forestry, 4th session (YB n° A 0971)
Chief, Conference Programming Section, FAO, via delle Terme di Caracalla, I-00100 Rome.

1978 May 15-25 Strasbourg (France)
Société des Professeurs d'Histoire Ancienne des Universités. Colloque int. UER des sciences historiques, Université des sciences humaines, 22 rue Descartes, F-67084 Strasbourg cédex.

1978 May 15-26 New York (USA)
UN, New York, NY 10017. (YB n° A 3375)

1978 May 15-18 Moscow (USSR)
Int Federation for Documentation, Committee « Terminology of Information and Documentation », meeting. (YB n° A 1823)
Prof Dr V I Gorkova, Chairman, c/o VINITI, Baltijskaja ul. 14, Moscow A 219.

1978 May 15-13 New York (USA)
United Nations, Preparatory Committee for the UN conference on technical co-operation among developing countries. (YB n° A 3375)
UN, New York, NY 10017.

1978 May 15-Jun 2 New York (USA)
United Nations, Committee on Contributions. (YB n° A 3375)
UN, New York, NY 10017.

1978 May 15-Jun 9 New York (USA)
United Nations, Trusteeship Council and drafting committees, 45th session. (YB n° A 3375)
UN, New York, NY 10017.

1978 May 16-17 Paris (France)
European Broadcasting Union, New Technologies Group meeting. (YB n° A 0598)
EBU, 1 rue de Varembe, CH-1211 Geneva 20.

1978 May 16-18 Liege (Belgium)
Int colloquium : Inland waters, management problems.
M L Calémbert, Université de Liège, Géologie générale et appliquée, Hydrogéologie-environnement, place du Vingt-Août 7, B-4000 Liège.

1978 May 16-26 Geneva (Switzerland)
United Nations, Int Narcotics Control Board. (YB n° A 3375)
Palais des Nations, CH-1211 Geneva 20.

1978 May 16-26 Geneva (Switzerland)
UN Conference on Trade and Development, Committee on Invisibles and financing related to Trade, 8th session, 2nd part. (YB n° B 3381)
Palais des Nations, CH-1211 Geneva 10.

• 1978 May 16-19 Vienna (Austria)
European Federation of National Associations of Engineers, Spring Meeting. (YB n° A 0741)
4 rue de la Mission Marchand, F-75016 Paris.

• 1978 May 16-27 Chamonix (France)
Scientific Committee on Antarctic Research, 15th Meeting. (YB n° B 3209)
SCAR, Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1ER, UK.

Le signe * indique un changement ou complément aux informations publiées précédemment.

The sign * indicates supplementary information of modification to previous announcements.

- 1978 May 18
Federation of Astronomical and Geophysical Services. Council meeting. Paris (France)
ICSU 51 Bd de Montmorency, F-75016 Paris. (YB n° A 0930)
- 1978 May 18-19
Centre Universitaire de Recherche Européenne et Int. Colloque Int : Assu-
lance et fiscalité dans la C.E.E.
CUREI Université des Sciences Sociales de Grenoble, Centre Universitaire
de Recherche Européenne et Int., BP 47 X-F-38040 Grenoble Cedex.
- 1978 May 18-20
(Italy) Milan
MGR, Piazza S Ambrogio, 16 Milan.
- 1973 May 20-22
Thessalonique (Greece)
- Ministère de l'Industrie et du Commerce, Le sous-ministre associé, 1090
Raymond Casgrain, Québec, Canada G1S 2E4.
- 1978 May 20-24
Ottawa (Canada)
Université d'Ottawa, 550 rue Cumberland, Ottawa, Ontario, Canada K1N 6N5.
- 1978 May 22-23
New York (USA)
UN Development Programme, Inter-Agency Task Force on Technical Co-
operation among Developing Countries. (YB n° B 3382)
UN, New York, NY 10017.
- 1978 May 22-24
Houston (Tx, USA)
American Society for Information Science. 7th Mid-year meeting : Martage-
ASIS, 1155 Sixteenth Street NW, Suite 210, Washington DC 20036, USA.
- 1978 May 22-26
Florence (Italy)
European Galvanisers Association. General assembly. (YB no A 0771)
Secretariat, MGR, Piazza S Ambrogio, 16 Milan, Italy.
- 1978 May 22-26
Heidelberg (Germany, Fed
Rep)
the education of migrant workers and their families. (YB n° A 3383)
Place de Fontenoy, F-75700 Paris.
- 1978 May 22-26
Nainville-les-Roches
(France)
9th Int congress of French Society for Radiation Protection.
R Marchand, SFRP, DSC, 18 rue Ernest Cognacq, F-92300 Levallois-Perret,
France.
- 1978 May 23-24
Dusseldorf (Germany,
Fed Rep)
8. Int Fachtagung für Schaumkunststoffe.
Fachverband Schaumkunststoffe e.V., Am Hauptbahnhof 12, 6000 Frankfurt/
Main 1, Germany, Fed Rep.
- 1978 May 23-25
Orsay (France)
Lasers.
M Fitaire, Laboratoire de Physique des Plasmas, Université Paris-Sud.
F-91405 Orsay cedex.
- 1978 May 23-30
Paris (France)
Unesco. Interim Intergovernmental Committee for Physical Education and
Sport, 2nd session. (YB n° A 3383)
Place de Fontenoy, F-75700 Paris.
- 1978 May 24-27
Berlin
(West)
Int. Steinmetz- und Bildhauerforum und Jahrestagung des Bundesinnungs-
verbandes des Deutschen Steinmetz-, Stein- und Holzbildhauerhandwerks.
P : 400.
Kongresshalle Berlin, John-Foster-Dulles Allée 10, D-1000 Berlin 21.
- 1978 May 18-19 and 25-26
Copenhagen (Denmark) and
Brussels (Belgium)
Management Centre Europe. Forum : Strategic business planning.
Avenue des Ans 4, B-1040 Brussels.
- 1978 May 28-Jun 1
Estoril (Portugal)
European Federation of Manufacturers and Corrugated Board. 15th Congress.
(YB n° A 0735)
FEFCO, 37 rue d'Amsterdam, 75008 Paris.
- 1978 May 28 Jun 2
Mexico (Mexico)
Int Hotel Association. 63rd Council meeting. (YB n° A 2110)
89 rue du Faubourg-Saint-Honoré, F-75008 Paris.
- 1978 May 29 Jun 2
Geneva (Switzerland)
UN Conference on Trade and Development. Committee on Manufactures.
9th session. (YB n° B 3381)
Palais des Nations, CH-1211 Geneva 10.
- 1976 May 29-Jun 4
Malmo (Sweden)
1st European congress on hypnosis in psychotherapy and psychosomatic
Kern Dr Gun Carlstam, Organistvagen 12, S-70220 Oerebro, Sweden.
- 1978 May 29-Jun 16
Geneva (Switzerland)
United Nations. Int law seminar. (YB n° A 3375)
Palais des Nations, CH-1211 Geneva 10.
- 1978 May 30 Jun 2
Luxembourg (Luxembourg)
Int Carriage and Van Union. Committee meeting, P : 100.
Chemins de fer fédéraux Suisses, Direction générale. Division de l'exploita-
tion. Hochschulstrasse 6, CH-3030 Berne, Switzerland. (YB no A 1445)
- 1978 May 30-Jun 3
Bologne (Italy)
5e Congrès Méditerranéen sur les thromboembolies.
Prof Dr S Coccheri, MD, Département d'Angiologie Hôpital Universitaire
S. Orsola, I-40138 Bologne.
- 1978 May 30-Jun 3
Osaka (Japan)
Secretariat of the 11th PAPS Meeting, Higashinari, POB 43, Osaka 537
Japan.
- 1978 Jun Early
Mexico (Mexico)
World Food Council. Session. (YB n° B 3430)
c/o FAO, via delle Terme di Caracalla, I-00100 Rome.
- 1978 Jun 1-2
Greenbelt (Md, USA)
Colloquium : Current problems in stellar pulsation instabilities.
Dr Janet Lesh, Goddard Space Flight Center, Greenbelt, MD 20771, USA.
- 1978 Jun 1-2
Namur (Belgium)
Société Belge de Physique. Assemblée de scientifique générale.
P Fettweis, Boeretang 200, B-2400 Mol, Belgium.
- 1978 Jun 1-3
Innsbruck (Austria)
Committee on Space Research/Int Astronomical Union. Symposium : X-ray
astronomy. (YB n° A 0323/A 1383)
COSPAR Secretariat, 51 Bd de Montmorency, F-75016 Paris.
- 1978 Jun 5
Nairobi (Kenya)
Environment Liaison Centre. World environment day. (YB no B 4322)
ELC, POB 72461, Nairobi.
- 1978 Jun 5-7
Gaithersburg (MD, USA)
M Linzer, Materials Building, A 329, National Bureau of Standards, Wash-
ington, DC 20234, USA.
- 1978 Jun 5-7
Innsbruck (Austria)
European Space Agency. Symposium : GEOS and ISEE A/B results. (YB n° A 0868)
8/10 rue Mario Nikis, F-75380 Paris cedex 15.
- 1978 Jun 5-7
Varallo (Italy)
(YB n° B 4486)
ICSU, 51 Bd de Montmorency, F-75016 Paris.
- 1978 Jun 5-8
Washington (USA)
13th Photovoltaic specialists conference.
J Goldsmith, MS 169/422, Jet Propulsion Lab., 4800 Oak Grove Dr., Pasafe-
na, CA 91103, USA.
- 1978 Jun 5-9
Amsterdam (Netherlands)
J Verhoeven, FOM-Institut, Kruislaan 407, NL-1098 SJ Amsterdam.
- 1978 Jun 5-9
Brandberg (Denmark)
Danish Council for Adult Education/University of Michigan / School of Edu-
cation/University of South Jutland. Seminar on adult education.
Mr P Himmelstrup, Sydjysk Universitetscenter, Glentevej 7, 6700 Esbjerg,
Denmark.
- 1978 Jun 5-9
Guatemala (Guatemala)
World Scout Bureau. 11th Inter-American conference. (YB no A 0194)
PO 1010297, San Jose, Costa Rica.
- 1978 Jun 5-9
Mantonvasor (Hungary)
IUNS/Unesco/UNU/ICSU. Meeting: Agricultural potentiality directed by
nutritional needs. (YB n° A 2743/A 3383/A 2485/A 1752)
ICSU, 51 Bd de Montmorency, F-75016 Paris.
- 1978 Jun 5-10
Jaca, Huesca (Spain)
9th Int seminar on theoretical physics- nonlinear problems.
A F Ranada, Departamento de Fisica Teorica, Facultad de Ciencias
Fisicas, Ciudad Universitaria, Madrid 3, Spain.
- 1978 Jun 5-11
Paris (France)
1er Congrès int de la discothèque. Ex. P: 50000.
Mlle Bernadette Stengel, Relations Extérieures, Centre Int de Paris, CIP
N°1, P-75683 Paris cedex 17.
- 1978 Jun 5-12
Tel Aviv (Israel)
Int Aviation Space Writers Association. Int meeting, P : 300.
Kenes, POB 16271, Tel Aviv.
- 1978 Jun 5-14
Paris
(France)
Unesco Meeting of governmental experts on the draft recommendation for
the Int standardization of statistics on science and technology. P : 150.
(YB no A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Jun 5-16 New York (USA)
United Nations. Committee on Crime Prevention and Control. (YB n° A 3375)
UN, New York, NY 10017. (YB n° A 3375)

1978 Jun 5-Jul 1 Geneva (Switzerland)
UN Development Programme. Committee of the Governing Council on Technological Co-operation among Developing Countries, session. (YB n° B 3382)
Palais des Nations, CH-1211 Geneva 10. (YB n° B 3382)

1978 Jun 6-9 Espoo (Finland)
Int Council for Building Research. Studies and Documentation. Commission W55 Building Economics, meeting. (YB n° A 1723)
POB 20704, NL-3001 JA Rotterdam. (YB n° A 1723)

1978 Jun 5-Jul 1 Geneva (Switzerland)
UN Development Programme. Intergovernmental Working Group on Over-head Costs. (YB n° B 3382)
Palais des Nations, CH-1211 Geneva 20. (YB n° B 3382)

1978 Jun 6-7 Paris (France)
Symposium : Problèmes de corrosion par les eaux dans les circuits de distribution. Centre Français de la Corrosion, 28 rue St Dominique, F-75007 Paris. (YB n° A 1723)
1978 Jun 6-10 Dubna (USSR)
3rd Int meeting on proportional and drift chambers. Yu. A. Shcherbakov, JINR, Head Post Office, POB 79, 101000 Moscow. (YB n° A 2396)

1978 Jun 7 Gothenburg (Sweden)
Nordic Association of Hotels and Restaurants. Annual meeting. c/o IHA Documentation Centre, 89 Faubourg Saint Honore-F-75008 Paris. (YB n° A 1723)
Z 1978 Jun 7-9 Dresde (Germany, Fed Rep)
Int Railway Film Bureau. Annual meeting. (YB n° A 2396)
BFC, Claude Roche. Service des Relations Extérieures et de la Presse de la SNCF, 68 rue Saint-Lazare, F-75436 Paris Cedex 09. (YB n° A 1723)

1978 Jun 7-9 Edinburgh (UK)
Int Council for Building Research. Studies and Documentation. Commission W18 Timber Structures. Meeting. (YB n° A 1723)
POB 20704, NL-3001 JA Rotterdam. (YB n° A 1723)

1978 Jun 7-9 Gaithersburg (MD, USA)
1st Int symposium on ultrasonic materials characterization. Harold Berger, Materials Building, Room A363, National Bureau of Standards. Washington, DC 20234. (YB n° A 2697)

1978 Jun 8-9 Baden-Baden (Germany Fed Rep)
VDI Werkstofftechnik, Postfach 1139, D-4000 Dusseldorf. (YB n° A 2697)

1978 Jun 8-10 Brussels (Belgium)
4e Congrès européen de dermopharmacie. Mr Hebrant, Secrétaire Général de l'Association pharmaceutique belge, rue Archimède 11, B-1040 Brussels. (YB n° A 2697)

1978 Jun 8-10 Milan (Italy)
Fondazione Giovanni Lorenzini. Int symposium on chemical toxicology of food. via Monte Napoleone 23, I-20121 Milan. (YB n° A 2697)

1978 Jun 8-22 (Israel)
American College of Nursing Home Administrators. Annual seminar. P : 300. Kenes, POB 16271, Tel Aviv, Israel. (YB n° A 2697)

1978 Jun 9-11 Brussels (Belgium)
Symposium int sur les grossesses à haut risque. Prof Vokaer, ULB, avenue Fr Roosevelt 50, B-1050 Brussels. (YB n° A 2697)

1978 Jun 12-14 Julich (Germany, Fed Rep)
Conference on vibrations of absorbed layers. P : 50 (inv). Lehwald, KFA Julich, Postfach 1913, D-5170 Julich. (YB n° A 2697)

1978 Jun 12-16 Copenhagen (Denmark)
Chorafas 1978 World seminar: Computer and data communications. Educational Enterprises, 26 Coniston Road, Blackpool, FY4 2BY, UK. (YB n° A 2697)

1978 Jun 12-16 Madison (USA)
Int Union of Biochemistry. Meeting : Biological nitrogen fixation. (YB n° A 2697)
IUB, Dr W J Whelan, University of Miami, Dept of Biochemistry, POB 520875, Miami, Fla 33152, USA. (YB n° A 2697)

1978 Jun 12-16 Paris (France)
Ecumenical Institute for the Development of People. Rencontre-formation : Elaboration et évaluation des projets de développement. (YB n° A 4463)
INODEP, 34 avenue Reille, F-75014 Paris. (YB n° A 4463)

1978 Jun 12-16 Turin (Italy)
Unesco. Séminaire interrégional sur l'amélioration de management de l'enseignement technique et professionnel. (YB n° A 3383)
Place de Fontenoy, F-75700 Paris. (YB n° A 3383)

1978 Jun 12-17 Rome (Italy)
FAO/WHO, 18th Session of codex committee on milk and milk products. (YB n° A 3545 A 0971)
FAO, via delle Terme di Caracalla, I - 00100 Rome (YB n° A 3545 A 0971)

1978 Jun 12-30 New York (USA)

1978 Jun 12-Jul 1 Geneva (Switzerland)
UN Development Programme. Governing Council, 25th sessions. (YB no B 3382)
Palais des Nations, CH-1211 Geneva 10. (YB no B 3382)

1978 Jun 13-16 Ghent (Belgium)
2nd Int symposium on quantitative mass spectrometry in life sciences. Prof Or A De Leenheer, Lab. voor Medische Biochemie en Klinische Analyse, De Pintelaan 135, B-9000 Ghent. (YB n° A 1117)

1978 Jun 13-16 Waltham (MA, USA)
Bruce M Foxman, Dept of Chemistry, Brandeis University Waltham MA 02154. (YB n° A 1117)

1978 Jun 14-16 Paris (France)
Place de Fontenoy, F-75700 Paris. (YB n° A 3383)

1978 Jun 14-16 Stockholm (Sweden)
Conference on photon correlation techniques. Lars Danielsson, Aeronautical Research Institute of Sweden POB 11021 S-16111 Bromma 11, Sweden. (YB n° A 1162)

1978 Jun 14-24 Herning (Denmark)
Int Amateur Theatre Association. 1st int summer theatre academy. (YB n° A 1162)
Dansk Amatør Teater Sarmvirke, Box 70, DK-6300 Grasten, Denmark. (YB n° A 1162)

1978 Jun 14-30 London (UK)
Inter-Governmental Maritime Consultative Organization Conference on search and rescue. (YB n° A 1117)
101-104 Piccadilly, London W1V 0AE, UK. (YB n° A 1117)

1978 Jun 15-17 Paris (France)
Congrès européen des vétérinaires. P : 700. Melle Bernadette Stengel, relations extérieures, Centre Int de Paris CIP N°1, F-75853 Paris Cedex 17. (YB n° A 1117)

1978 Jun 16 New York (USA)
United Nations. Soweto Day - meeting of the Special Committee against Apartheid. (YB no A 3375)
UN, New York, NY 10017. (YB no A 3375)

1978 Jun 16-18 Catanzaro (Italy)
2e Congrès int de cardiologie préventive et réhabilitation. AISC, via J B Marlini 6, I-00198 Rome. (YB no A 3375)

1978 Jun 16-27 Bergen (Norway)
Int Railway Temperance Union. Congress. P : 250, 350, C : 10-12. ZYB n° A 2397)
Postfach 717, CH-8021 Zurich 1, Switzerland. (ZYB n° A 2397)

1978 Jun 19-21 Marseille (France)
5e Journées int d'endocrinologie : Relations physiopathologiques du diabète et de l'obésité. Ex. Prager Philippe Vague, Clinique endocrinologique, CHU de la Timone, F-13385 Marseille, cedex 4. (YB n° A 3383)

1978 Jun 19-23 Alexandria (Egypt)

Arab States. P : 85. (YB noA 3383)
Place de Fontenoy, F-75700 Paris. (YB noA 3383)

1978 Jun 19-23 Tel Aviv (Israel)
2nd Int conference on psychological stress and adjustment in time of war and peace. Prof Noah Milgram, POB 16271, Tel Aviv. (YB n° A 3383)

1978 Jun 19-28 Kuala Lumpur (Malaysia)
and Oosania. P: 250. (YB n° A 3383)
Place de Fontenoy, F-75700 Paris. (YB n° A 3383)

1978 Jun 19-30 New York (USA)
United Nations. Preparatory Committee for the World Conference of the UN Decade for Women. (YB no A 3375)
UN, New York, NY 10017. (YB no A 3375)

1978 Jun 19-Jul 14 Paris (France)
Ecumenical Institute for the Development of People. Rencontre-formation pour militants évangéliques - Vers une libération effective des opprimés. (YB n° A 4463)
INODEP, Secrétariat Pédagogique de la RFME, 34 avenue Reilles, F-75014 Paris. (YB n° A 4463)

1978 Jun 20-21 Milan (Italy)
Symposium on recent advances in liver diseases. Ex. Secretariat, MGR, Piazza S Ambrogio, 16 Milan. (YB n° A 4463)

1978 Jun 20-22 Atlanta (GA, USA)
Int symposium on electromagnetic compatibility. I/C Toler, Engineering Experiment Station, Georgia Tech. Atlanta, GA 30332. (YB n° A 4463)

United Nations - Board of Auditors (YB no A 3375)
UN, New York, NY 10017. (YB no A 3375)

1978 Jun 20-22 Brussels (Belgium)
 Congrès des producteurs de blé.
 Association des Producteurs de Blé, avenue Wilson, Paris, France.

1978 Jun 21 Paris (France)
 Int chamber of Commerce. Council. 132nd session. (YB no A 1490)
 38 Cours Albert 1er, F-75008 Paris.

1978 Jun 22-23 Bry-sur-Marno (France)
 European Broadcasting Union. Executive Group of Heads of Technical
 Training Centres, meeting. (YB n° A 0598)
 EBU, 1 rue de Varembe, CH-1211 Geneva 20.

1978 Jun 24-Jul 1 Colombo (Sri Lanka)
 (YB n° A 3383)
 Place de Fontenoy, F-75000 Paris.

1978 Jun 25-30 Boston (MA, USA)
 American Society of Testing and Materials. Meeting : Behaviour of deep
 foundations, performance of concrete surfaces.
 c/o IABSE, ETH-Honggerberg, CH-8093 Zurich.

1978 Jun 25-Jul 1 Rome (Italy)
 Mint Directors' Conference. Conférence.
 MDC, Eng. F Moutinho. Director, Cass da Moeda, Av Antonio José de Almeida,
 Lisboa 1, Portugal.

1978 Jun 26-30 Geneva (Switzerland)
 (YB n° A 0971 /A 3548)
 FAO, Via delle Terme di Caracalla, I-00100 Rome.

1978 Jun 26-30 Munich (Germany, Fed Rep)
 XII Acta endocrinologica congress.
 Prof Dr P Scriba, Med. Klinik Innenstadt der Universität München, Ziem-
 strasse 1, D-8000 Munich 2.

1978 Jun 26-30 Vienna (Austria)
 United Nations University. Council. (YB n° B 2488)
 29th Floor, TOHJI Semel Building, 15-1 Shibuya 2-chome, Shibuya-ku, Tokyo
 150, Japan.

1978 Jun 26-Jul 1 Bucharest (Rumania)
 UN Economic Commission for Europe. Regional meeting for the UN Con-
 ference on Science and Technology for Development. (YB n° B 4176)
 Palais des Nations, CH-1211 Geneva 20.

1978 Jun 26-Jul 7 New York (USA)
 United Nations. Committee on the Peaceful Uses of Outer Space. (YB n° A 3375)
 UN, New York, NY 10017.

1978 Jun 27-30 Geneva (Switzerland)
 (YB n° 3375)
 missions.
 Palais des Nations, CH-1211 Geneva 20.

1978 Jun 27-30 La Jolla (CA, USA)
 3rd Int workshop on rare-Earth-cobalt permanent magnets and their applica-
 tions.
 KJ Strmat, Univ of Dayton, KL-365, Dayton, OH 45469, USA.

1978 Jun 28-30 Turin (Italy)
 Journées de calorimétrie et d'analyse thermique.
 G Délia Gatta, Istituto di Chimica Generale ed Inorganica, via Pietro Giuria
 9, I-10125 Turin.

1978 Jun 30-Jul 3 Athens (Greece)
 European Broadcasting Union. General assembly. (YB n° A 0598)
 EBU, 1 rue de Varembe, CH-1211 Geneva 20.

1973 Jun-Jul (3 days) Geneva (Switzerland)
 United Nations Institute for Training and Research. Annual meeting of
 directors of institutes within the UN family. (YB n° B 3387)
 Palais des Nations, CH-1211 Geneva 20.

1978 Jun Nice (France)
 Colloque int de Nice sur JJ Rousseau et Voltaire : Regards de 1978 sur les
 occupations et préoccupations de l'homme en retraite.
 Faculté des lettres et sciences humaines, Université de Nice, 98 Bd Car-
 lone, Nice.

1978 Jun Oslo (Norway)
 Int Council of Museums. Int Committee for Modern Art Museums. Meeting.
 Mr Ole Moe, Director, Soraja Henie Museum, Baerum-Hovloden, Oslo.

1878 Jun (UK)
 Int Federation of Agricultural Producers. European Committee. Meeting.
 (YB n° A 1850)
 FIPA, 1 rue O'Hauteville, F-75010 Paris.

1978 Jun
 Int Air Carrier Association. Membership assembly. (YB n° A
 4084)
 IACA, POB 105, (Office 336), CH-1215 Geneva 15.

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1978 Jun - Jul (Mexico) Coooyoc
Unesco Int seminar on earthquake hazard and Insurance. P : 65.
Place de Fontenoy, F-75700 Paris.

1978 Jun-Jul Geneva (Switzerland)
UN Conference on Trade and Development. Intergovernmental Group of Experts on an Int Code of Conduct on Transfer of Technology. 6th session.
Palais des Nations, CH-1211 Geneva 20.

1978 Jun-Jul (Canada)
Unesco. Round table for television Journalists on the restitution or return of cultural property to the countries of origin. (YB no A 3383)
Place de Fontenoy, F-75700 Paris.

1978 2nd half
Int Labour Organization. American States members, 11th conference.
ILO, regional office, 1750 New York Avenue, NW, Suite 330, Washington, DC 20006.

1978 Jul 2-6 Tel Aviv (Israel)
Israel Denial Association. Int meeting. P : 300.
Kenes, POB 16271, Tel Aviv.

1978 Jul 2-7 Tabor (Czechoslovakia)
Sth Int symposium on high energy multiparticle dynamics.
V Simak. Institute of Physics CSAV, Na Slovance 2, CZ-18040 Prague 8.

1978 Jul 3-4 Geneva (Switzerland)
United Nations. Joint meetings of the Committee for Programme and Co-ordination and the Administrative Committee on Co-ordination. (YB no A 3375)
Palais des Nations, CH-1211 Geneva 20.

1978 Jul 3-14 Brussels (Belgium)
Prof Laconte, avenue Lemaitre, B-1348 Louvain La Neuve, Belgium. (YB n° A 3005)

1978 Jul 3-14 (Australia)
Unesco. Regional seminar on education of the mentally handicapped. (YB no A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Jul 3-21 Paris
United Nations. Int Civil Service Commission, 8th session. (YB no A 3375)
Palais des Nations, CH-1211 Geneva 20.

1978 Jul 4-7 Oxford (UK)
Topical conference : Neutrino physics and accelerators. P : 120 (inv).
Neutrino Conference Secretariat, Rutherford Laboratory, Chilton, Didcot, Oxon., OX11 0QX, UK.

1978 Jul 4-8 Hamburg (Germany Fed Rep)
3rd Int conference on marine transport using Roll-on/Rolloff methods.
Secretariat conference. Ro-Ro. BML Business Meetings Mtd, 2 Station Road, Rickmansworth, Herts WD3 1QP, UK.

1978 Jul 5-Aug 4 Geneva (Switzerland)
UN Economic and Social Council. 2nd regular session 1978. (YB n° B 3377)
Palais des Nations, CH-1211 Geneva 20.

• 1978 Jul 6-7 Paris (France)
Int Council of Scientific Unions Abstracting Board. Bureau National d'Information Scientifique et Technique. Séminaire sur : La révolution du conformation et ses implications pour l'utilisateur. (YB n°B 1753)
Secrétariat de l'ICSU A8, 17 rue Mirabeau, F-75016 Paris.

1978 -Jul 9 Oxford (UK)
World council for the Welfare of the Blind. Committee on Coordination of Aid to Developing Countries, meeting (YB n° A 3499)
53 avenue Bosquet, F-75007 Paris.

1978 Jul 9-13 Bodo (Sweden)
12th European conference on psychosomatic research.
Mr Frode Larsen, MC. General Secretary of the 12th European conference on psychosomatic medicine, Psykosomatisk Avd Rikshospitalet Oslo 1 Norway.

1978 Jul 9-15 Spetsal (Greece)
Int Union of Biochemistry. Int symposium on chloroplast development.
c/o ICSU, 51 Bd de Montmorency, F-75016 Paris.

1978 Jul 10-14 Toulon (France)
Int Council of Scientific Unions Abstracting Board, Annual meeting. (YB n° B 1753)
17 rue Mirabeau, F-75016 Paris.

1978 Jul 10-15 Athens (Greece)
Conseil National Grec de l'Energie / Département de l'Energie des Etats-Unis. 1ère Conférence Int sur l'Energie et le Développement
Environmental Design Co, c/o H.P.O. 36, Voukourestiou Street, Athens 136

1978 Jul 10-21 New York (USA)
United Nations. Intergovernmental Group of Experts on Mineral and Energy Exploration Financing, 2nd meeting. (YB no A 3375)
UN, New York, NY 10017.

1978 Jul 10-28 New York (USA)
United Nations. Human Rights Committee, 4th Session. (YB n° A 3375)
UN, New York, NY 10017.

• 1978 Jul 12-15 Curacao (Netherlands Antilles)
Curacao Jaycees/Netherlands Antilles Jaycees/Jaycees Int. Conference P : 300. C. 15. (YB no 2853)
Ing Ruben R E Page, Conference director, Curacao JCI Conference. Labadera N°2, St. Rosaweg, Curacao.

• 1973 Jul 15 - Aug 6 Brussels (Belgium)
Int Friendship League. Annual congress. (YB n° A 2068)
I.F.L., rue Albert de Latour 63, B-1030 Brussels.

• 1978 Jul 16-26 Tunis (Tunisia)
Inter-University European Institute on Social Welfare/Int Association for Community Development. Session de formation : Le progrès social par le
IEIAS, rue du Débarcadère 179, B-6001 Marcinelle, Belgium. (YB n° A 4410)

1978 Jul 17-22 Marilia (Brazil)
Kultural Kooperativo de Esperantistoj, CP 1887, BR-20000 Rio de Janeiro.

1978 Jul 18-21 Paris (France)
Unesco. Int seminar on volcanic emergencies. (YB n° A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Jul 19-24 (Morocco)
World Scout Bureau. Arab conference. (YB n° A 0194)
Arab Office, POB 1384, Cairo, Egypt.

1978 Jul 23-25 Turin (Italy)
Fondazione Giovanni Lorenzini. « Pharmacological modulation of steroid action » - satellite symposium of the 7th int congress of pharmacology.
Via Monte Napoleone 23, I-20121 Milan.

1978 Jul 23-26 Vancouver (Canada)
Fédération Dentaire du Pacifique. Session.
Dr Ken Neuman, 1125 W. 8th Avenue, Vancouver, BC V6H 105, Canada.

1978 Jul 23-29 Geneva (Switzerland)
Association for Humanistic Psychology. 2nd European conference for humanistic psychology.
43 chemin de la Greube, CH- 1214 Vernier-Geneva.

1978 Jul 23-Aug 5 Nairobi (Kenya)
World Association for Christian Communication. Séminaire d'étude pour édifier la publication à l'intention des jeunes éditeurs. (YB n° A 3461)
WACC, 22 King's Road, London SW3 4TR, UK.

1978 Jul 24 Brussels (Belgium)
Symposium : Le processus Inflammatoire.
Prof Reuse et Dr Famaey, ULB, avenue Fr Roosevelt 50, B-1050 Brussels.

1978 Jul 24-26 Brussels (Belgium)
Prof T Godtrand UCL, avenue Mounier 73, B-1200 Louvain en Woluwe, Belgium.

1978 Jul 24-28 Hong Kong (Hong Kong)
James Martin World seminar. P : 160.
Speakman Pascoe, Consultancy Ltd, 3710, Connaught Centre, Hong Kong.

1978 Jul 24-Aug 11 New York (USA)
United Nations. Committee on the Elimination of Racial Discrimination. 18th session. (YB n° A 3375)
UN, New York, NY 10017.

1978 Jul 25-29 Rome (Italy)
Associazione Int di Studi Medico-Psicologici e Religiosi. 8th Int congress. A1SC, via J B Martini 6, I-00198 Rome.

1978 Jul 30-Aug 5 Salzburg (Austria)
European Bureau of Adult Education. 21st Salzburg discussions of leaders on adult education. (YB n° A 0601)
Rudolfplatz 8, A-1010 Vienna.

1978 Jul 31-Aug 3 Haifa (Israel)
Int Federation for Information Processing, TC 4. Working conference on computer aided ultrasonics and tomography in medicine. (YB n° A 1828)
3 rue du Marche, CH-1204 Geneva.

1978 Jul 31-Aug 11
United Nations. Advisory Committee on Technology to Development.
Palais des Nations, CH-1211 Geneva 20.
Geneva (Switzerland)
the Application of Science and Technology to Development.
(YB no A 3375)

1978 Jul 31-Aug 18 or 25
United Nations. Conference on Succession of States In Respect of Treaties.
Palais des Nations, CH-1211 Geneva 20. **
Vienna (Austria)
(YB n° A 3375)

1978 Jul
Int Fédération of Women In Legal Careers. Congres : Les aspects juridiques
Dakar (Senegal)
(YB no A 2041)

9 Boulevard Saint Martin, E 75003 Paris.

1978 Jul
Inter-Union commission on Geodynamics. Symposium : Dynamics of plateau uplift.
4486
C/o ICSU, 51 Bd de Montmorency, F-75016 Paris.
Flagslaff (Ariz. USA)
(YB n°B)

1978 Jul-Aug
Unesco. Symposium on the co-ordination of linguistic research in view of tercommunication.
Place de Fontenoy, F-75700 Paris.
(Upper Volta)
(YB n° A 3383)

1978 Aug 1-4
Conference on applications of X-ray analysis.
Mildred Cain. Metallurgy and Materials Science Division, Denver Research Institute. University of Denver, Denver, CO 80208, USA.
Denver (Col. USA)

1978 Aug 1st week - Sep 1st week
United Nations. Special Committee on Decolonization.
UN, New York, NY 10017.
New York (USA)
(YB n° A 3375)

1978 Aug 7-11
United Nations. Committee of Experts on the Transport of Dangerous Goods: Group of Rapporteurs, 22nd session.
Palais des Nations, CH-1211 Geneva 20.
Geneva (Switzerland)
(YB n° A 3375)

1978 Aug 7-12
1st Int congress for the study of child language. P : 550. C : 30.
The ICU Language Sciences Summer institutes, Secretariat, Prof Dr F C Peng, c/o Dept of Linguistics, Int Christian University, 3-10-2, oosawa, Mitaka City, Tokyo 181.
Tokyo (Japan)

• 1978 Aug 9-12
Int Astronomical Union. Colloquium : formation of images from spatial coherence functions in astronomy. P : 100 (inv.) (YB n° A 1382)
W.N. Brouw, Sterrewacht-Huygens Laboratorium, 78 Wassenaarseweg, Leiden 2405, Netherlands.
Groningen (Netherlands)

1978 Aug 10-12
Int symposium on photopion nuclear physics.
P Stoler, Physics Dept. Rensselaer Polytechnic Institute, Troy, NY 12181.
Troy (NY, USA)

1978 Aug 11-12
Int Mathematical Union. General assembly.
c/o ICSU, 51 Bd de Montmorency, F-75016 Paris.
Otaniami (Finland)
(YB n° A 2247)

1978 Aug 12-18
Int union of Pure and Applied Chemistry. Symposium : Mass spectrometry.
Oslo (Norway)
(YB no A 2767)

1978 Aug 14-18
United Nations. Committee of Experts on the Transport of Dangerous goods: Group of Experts on Explosives.
Palais des Nations, CH-1211 Geneva 20.
Geneva (Switzerland)
(YB n° A 3375)

1978 Aug 14-18
Nordic Folk High School Council/ Further Education Department of the Swedish National Board of Education/European Bureau of Adult Education.
Int conference on residential adult education.
Nordens Folkliga Akademi. S-44200 Kungälv.
Kungälv (Sweden)
(YB n° A 0601)

1978 Aug 14-18
United Nations. Advisory Committee for the Int Year for Disabled Persons 1st meeting.
UN, New York, NY 10017.
New York (USA)
(YB n° A 3375)

1978 Aug 14-20
Int Union of Biological Sciences. Symposium : Photomorphogenesis.
c/o ICSU, 51 Bd de Montmorency, F-75016 Paris.
Aarhus (Denmark)
(YB n° A 2698)

1978 Aug 14-25
United Nations. Commission on Human Rights-Sub-Commission on the Prevention of Discrimination and Protection of Minorities - Working Group on Communications.
Palais des Nations, CH-1211 Geneva 20.
Geneva (Switzerland)
(YB n° A 3375)

1978 Aug 14 - 25
United Nations. World conference to Combat Racism and Racial Discrimination.
Palais des Nations, CH-1211 Geneva 20.
Geneva (Switzerland)
(YB n° A 3375)

1978 Aug 17-22
Int Union of Pure and Applied Chemistry. Symposium : Physical organic chemistry.
IUPAC, Dr M Williams, Bank Court Chambers, 2-3 Pound Way Cowley Centre, Oxford OX4 3YF, UK.
Santa Cruz (Cal USA)
Physical organic chemistry.
(YB no A 2767)

1978 Aug 12-16
World Scout Bureau. 11th Asian Pacific scout conference. P + 400
Mr Vincent Chang, Int Relations Commissioner, The Scout Association of HK, Morse House, 9 Cox's Road, Kowloon, Hong Kong.
Hong Kong (Hong Kong)

1978 Aug 18 - Sep 2
Int conference on nuclear Interactions.
Australian Academy of Sciences, POB 783, Canberra City. ACT 2601.
Canberra (Australia)

• 1978 Aug 19-26
Int Federation of the Temperance Blue Cross Societies. Conférence.
Jean-Paul Widmer, Route do Florissant 51, CH-1206 Geneva.
Berlin (West)
(YB n° A 2031)

1978 Aug 20-25
(Japan)
13th Int congress on high speed photography and photonics. P : 400. C : 30.
2-22-17, Hyakunin-cho, Shinjuku-ku, Tokyo.
Tokyo

1978 Aug 21-25
Committee on Int Océanographie Data Exchange.
UN, New York, NY 10017.
New York (USA)
(YB n° A 3375)

• 1978 Aug 21-26
Library Department of the German Democratic Republic/Int Federation of Library Associations, Regional Activities Division. Seminar: Basic problems in developing countries.
IFLA, POB S2126, 2508 EC The Hague, Netherlands.
Berlin (East)
(YB n° A 1945)

1978 Aug 21-Sep 15
United Nations. Special Committee on Enhancing the Effectiveness of the Principal of Non-Use of Force in Int Relations.
UN, New York, NY 10017.
New York (USA)
(YB no A 3375)

1978 Aug 22-28
Int Union of Theoretical and Applied Mechanics. 3rd Symposium on shell theory.
IUTAM, Prof Jan Hult, Chalmers University of Technology, Pack, S-402 20 Gothenburg, Sweden.
Tbilisi (USSR)
(YB n° A 2788)

1978 Aug 22-31
NATO Advanced Study institute. Seminar : Infrared and Raman spectroscopy.
Prof T Theophanides, National Hellenic Research Foundation, 48 B Constantinou Avenue, Athens 501 / 1.
Athens (Greece)

1978 Aug 23-25
United Nations. Commission on Human Rights - Sub-Commission on the Prevention of Discrimination and Protection of Minorities - Group of Five on Slavery.
Palais des Nations, CH-1211 Geneva 20.
Geneva (Switzerland)
(YB n° A 3375)

1978 Aug 23-31
ERANOS conference : In time and out of time.
Rudolf Ritsema, Casa Eranos, CH-6612 Ascona.
Ascona (Switzerland)

1978 Aug 24-30
Int Union of Pure and Applied Physics. Symposium : Few body systems and nuclear forces.
c/o ICSU, 51 Bd de Montmorency, F-75016 Paris.
Graz (Austria)
(YB no A 2768)

• 1978 Aug 25-29
IMU/Int Union of Theoretical and Applied Mechanics. Symposium on group theoretical methods in mechanics. P: Inv. (YB n° A 2788)
IUTAM, Prof Jan Hult, Chalmers University of Technology, Fack, S-402 20 Gothenburg, Sweden.
Novosibirsk (USSR)

• 1978 Aug 28-Sep 2
Int Union of Pure and Applied Physics, Int conference on nuclear reactions, p. 220.
Prof J O Newton, Australian Academy of Science. The Australian Institute of Physics, Nuclear and Particle Physics Group, C - Dept of Nuclear Physics. Australian National University, POB 4, Canberra, ACT 2600.
Canberra (Australia)
(YB n° A 2768)

• 1978 Aug 28 Sep 3
Int Union of Theoretical and Applied Mechanics. Symposium on metal forming plasticity. P : Inv. (YB no A 2768)
Prof Dr H Lippmann, Lehrstuhl A für Mechanik, Technische Universität, Arcisstrasse 21, Postfach 20 24 20, D-8000 Munich 2.
Tulzing (Germany, Fed Rep)

1978 Aug 28-Sep 6
Unesco. Intergovernmental conference on strategies and policies for informatics. P : 500.
Place de Fontenoy, F-75700 Paris.
Torremolinos (Spain)
(YB no A 3383)

1978 Aug 28-Sep 8
Advanced research seminar and workshop on ecosystems modeling assessment.
Prof P Berthet, ECAN-Place Croix du Sud, B-1348 Louvain-la-Neuve.
Louvain-la-Neuve (Belgium)

1978 Aug 28-Sep 9
NATO Advanced Study Institute, Seminar : Electrons in disordered metals and at metallic surfaces. P : 70.
Dr P Phariseau, Seminar voor Theoretische Vaste Stofen lage Energie Kernfysica. RUG - Krijgslaan 271 /S9. B-9000 Ghent. Ghent (Belgium)

1978 Aug 28-Sep 15
United Nations. Preparatory conference for the UN Conference on Prohibitions or Restrictions of Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate effects. Palais des Nations, CH-1211 Geneva 20. Geneva (Switzerland)

1978 Aug 28-Sep 15
United Nations. Commission on Human Rights - Sub-Commission on Prevention of Discrimination and Protection of Minorities, 31st session. Palais des Nations, CH-1211 Geneva 20. Geneva (Switzerland)

1978 Aug 29-Sep 1
Unesco. Int meeting of experts on engineering manpower needs
Place de Fontenoy, F-75700 Paris. France)

1978 Aug 30-Sep 12
United Nations. Conference on Technical Co-operation among Developing Countries. New York, NY 10017, USA. Buenos Aires (Argentina)

1978 Aug 31-Sep 6
Fédération Mondiale de Biologie/Société Espagnole de Psychiatrie biologique, 2e Congrès mondial de psychiatrie biologique. Secretariat du 2e Congrès Mondial de... C Casanova 141, Barcelona. Barcelona (Spain)

1978 Aug 31-Sep 9
European physical study conference on solid 3He and 4He and liquid 3He. P : 70 (inv). M T Béat-Monod, I.L.L., Avenue des Martyrs, BP 156, Centre de Tri. F-38042 Grenoble cedex. Les Houches (France)

1978 Sep 3-6
Asian and Australian Hotels and Restaurants Association. Annual convention. P : 500. Mr W E Collard, Executive Director, Hong Kong Hotels Association, 1801 World Trade Centre, Hong Kong. Hong Kong (Hong Kong)

1978 Sep 3-9
Mont Pèlerin Society. General meeting. P : 400. Mr Edwin J Feulner Jr., The Mont Pèlerin Society, 6216 Berkeley Road, Alexandria, Virg 22307, USA. Hong Kong (Hong Kong)

1978 Sep 3-10
Liberal Int - World Liberal Union. Int seminar : Relations between W Europe and N America. 1 Whitehall Place, London SW1A 2HE, UK. Bremen (Germany, Fed Rep)

1978 Sep 4-5
Int Union of Theoretical and Applied Mechanics. General assembly. IUTAM, Prof Jan Hult, Chalmers University of Technology, Pack, S-Gothenburg, Sweden. Herrenalb (Germany, Fed Rep)

1978 Sep 4-6
Cement and Concrete Association Conference and Training Centre, Fulmer Grange, Fulmer, Slough SL2 4QS, UK. London (UK)

1978 Sep 4-7
1st Int topical meeting on muon spin research (USR). P : 70. Conference Secretariat, SIN, CH-5234 Villigen, Switzerland. Rorschach (Switzerland)

1978 Sep 4-8
Unesco 2nd Symposium of editors of documentation, library and archives journals. Place de Fontenoy, F-75700 Paris. Berlin (East)

1978 Sep 4-8
Physical conference on quasi one-dimensional conductors. P : 150. S Barisic, Institute of Physics, University, Bijenicka cesta 46 POB 304 YU-41001 Zagreb. Dubrovnik (Yugoslavia)

1978 Sep 4-8
German Federal Centre of Meat Research. 24th European meeting of meat Organisationskomitee des 24. Europäischen Fleischforscherkongress der BAFF, Oskar-von-Miller-Strasse 20, 8650 Kulmbach. Kulmbach (Germany, Fed Rep)

1978 Sep 4-8
Int Federation for Information Processing. SEARCC 78-2nd South-East Asian regional computer conference. IFIP, 3 rue du Marché, CH-1204 Geneva. Manila (Philippines)

1978 Sep 4-8
Unesco. Seminar on methods for planning and assessing of population programmes. Place de Fontenoy, F-75700 Paris. Paris (France)

1978 Sep 5-7
Scientific Society of Mechanical Engineers. 3rd Colloquium on pneumatics-hydraulics. C/o FABI, Square Marie-Louise 28, Bte 1, B-1040 Brussels, Belgium. Gyor (Hungary)

1978 Sep 5-8
Jean Desesquelles, Laboratoire de Spectrométrie Ionique et Moléculaire Université de Lyon 1, Campus de Doua, F-69621 Villeurbanne, France. Lyon (France)

1978 Sep 5-15
United Nations. -Committee on Science and Technology for Development aclin as Preparatory Committee for the UN Conference on Science and Technology. UN, New York, NY 10017. UN Secretariat, 2 rue Fabert, F-75007 Paris, or: Palais des Congrès, Strasbourg. New York (USA)

1978 Sep 6-8
Int symposium on analytical applications of bioluminescence and chemiluminescence. De Heer T Decat, PVBA Contact, de Gerlachestraat 9, Bte 2, 6-3500 Hasselt, Belgium. Brussels (Belgium)

1978 Sep 6-8
British Association for Crystal Growth. Annual conference : The growth and properties of crystals. Dr R A M Scott, Division of Materials Science and Physics, Thames Polytechnic, Wellington Street, London SE18 6PF, UK. Swansea (UK)

1978 Sep 16-10
Int League against Unfair Competition. Congress. P : 300-400. Secretariat, 2 rue Fabert, F-75007 Paris, or: Palais des Congrès, Strasbourg. Strasbourg (France)

1978 Sep 2nd week
Int Federation for Information Processing. Council and general assembly meetings. IFIP Secretariat, 3 rue du Marché, CH-1204 Geneva. Oslo (Norway)

1978 Sep 11-13
Int Union of Theoretical and Applied Mechanics. Symposium on variation methods in the mechanics of solids. P : inv. Prof S Nemat-Nasser, The Technological Institute, Northwestern University, Evanston, Ill 60201, USA. Evanston (Ill, USA)

1978 Sep 11-13
Congrès int sur les procédés d'oxydation appliqués au traitement de l'eau potable. C : 10. D V G W-Forschungsstelle am Engler-Bunte-Institut der Universität Karlsruhe - Wasserchemie - Richard-Wiltschatter Allee 5, 7500 Karlsruhe. Karlsruhe (Germany, Fed Rep)

1978 Sep 11-14
Organizing Secretariat, POB 121, DK-2740 Shovlunde, Denmark. Marseille (France)

1978 Sep 11-14
via Monte Napoleone 23, I-20121 Milan. Pisa (Italy)

1978 Sep 11-15
Unesco. Conference of ministers responsible for science and technology policy in the European and North American region. P : 250. Place de Fontenoy, F-75700 Paris. Belgrade (Yugoslavia)

1978 Sep 11-15
6th European cosmic ray symposium. P : 120. G Wibberenz, Inst. f. Reine u. Angewandte Kernphysik, Christian-Albrechts-Universität, Olshausenstrasse 40-60, Gebäude N 20 a, 0-23 Kiel. Kiel (Germany, Fed Rep)

1978 Sep 11-16
Von Karman Institute for Fluid Dynamics. 2nd Int symposium on gas-flow and chemical lasers. VKIFD, chaussée de Waterloo 72, B-1640 Rhode-St-Genese. Rhode-St-Genese (Belgium)

1978 Sep 12-15
UN Institute for Training and Research. Board of Trustees. UN, New York, NY 10017. New York (USA)

1978 Sep 12-15
Conference on computational atomic and molecular physics. Or R L Hudson, Mathematics Dept., University of Nottingham, Nottingham NG7 2RD, UK. Nottingham (UK)

1978 Sep 12-15
European Federation of Corrosion. Wissenschaftliches Kolloquium über Korrosion in Süsswasser. Wissenschaftlicher Verein für Maschinenbau, POB 451, H-1372 Budapest. Pecs (Hungary)

1978 Sep 12-15
Int Union of Pure and Applied Biophysics. Int symposium on membrane structure and function. IUPAB, Prof R D Keynes, F R S. Physiological Laboratory, Cambridge CB2 3EG, UK. Wairakei (New Zealand)

- 1978 Sep 12 - 15
 Technical University of Wrocław. Institute of Engineering Cybernetics (Poland)
 Wrocław (Poland)
 Dr L Koszalka, Technical University of Wrocław. Institute of Engineering Cybernetics, Janiszewskiego st. 11/17, 50-370 Wrocław.
- 1978 Sep 12-16
 European Federation of Corrosion, Fachtagung anlässlich der Surface 78. (Switzerland)
 Basel (Switzerland)
 Schweizerische Galvanotechnische Gesellschaft, Badstrasse 15. CH-5400 Baden. (YB no A 0728)
- 1978 Sep 12 - 16
 Union of Pure and Applied Chemistry. 13th European congress on molecular spectroscopy. (YB n° A 2767)
 Wrocław (Poland)
 IUPAC, Dr M Williams, Bank Court Chambers, 2-3 Pound Way, Cowley Centre Oxford OX4 3YF, UK.
- 1978 Sep 13-15
 Rehabilitation Int, Medical Commission. 4th Int seminar. (UK)
 Southampton (UK)
 Prof Dr Karlheinz Renker, Gesellschaft für Rehabilitation in der DDR Harz 42-44, Halle (Saale), German Dem Rep. (YB n° 2501)
- 1978 Sep 13-15
 Int Union of Radio Science. Symposium : Electromagnetic Compatibility. (Poland)
 Warsaw (Poland)
 URSI, rue de Nieuwenhove 81, B-1180 Brussels, Belgium. (YB no A 2770)
- 1978 Sep middle
 Unesco, Executive Board. 10511 session. (France)
 Paris (France)
 Place de Fontenoy, F-75700 Paris. (YB n° A 3383)
- 1978 Sep 16-17
 Conférences et 5e salon int « des minéraux et fossiles ... (Belgium)
 Brussels (Belgium)
 Cercle des Géologues de Belgique, Mr Leemans, rue Félix Delhasse 36, B-1060 Brussels.
- 1978 Sep 17-20
 Int Federation of Freight Forwarders Associations. Autumn meetings. (Spain)
 Barcelona (Spain)
 POB 177, CH-8026 Zurich. (YB n° A 1916)
- 1978 Sep 17-20
 Int Union of Biological Sciences, 4th Int congress of myriapodology. (Italy)
 Gargnano (Italy)
 c/o ICSU, 51 Bd de Montmorency, F-75016 Paris. (YB n° A 2698)
- 1978 Sep 17-22
 3rd World conference of therapeutic communities. (Italy)
 Rome (Italy)
 Mr J Corelli, MD, Centro Italiano de Solidarieta, Piazza B Cairoli 118, I-00186 Rome.
- 1978 Sep 17-23
 FEANI, 4 rue de la Mission Marchand, F-75015 Paris. (Italy)
 Pavie (Italy)
 (YB n° A 0741)
- 1978 Sep 17-24
 Int Association of Scientific Experts in Tourism. General assembly. (Egypt)
 Cairo (Egypt)
 AIEST, Heugensgasse 15, CP 2597, CH-3001 Berne. (YB n° A 1339)
- 1978 Sep 18-20
 ESCAMPIC- 4th Euro-physics conference on atomic and molecular physics in ionized gases. P : 100. (Germany, Fed Rep)
 Essen (Germany, Fed Rep)
 H F Dobelev Fachbereich Physik, Universität Essen, Postfach 6843, D-4300 Essen.
- 1978 Sep 18-20
 Int Union of Pure and Applied Physics. General assembly. (Sweden)
 Stockholm (Sweden)
 IUPAP, Prof L Kerwin, Rector, University Laval, Quebec, PQ, Canada G1K 7P4. (YB n° A 2768)
- 1978 Sep 18-21
 Rehabilitation Int/Royal Association for Disability and Rehabilitation. European Conference on disability and family. Ex. (UK)
 Brighton (UK)
 Naidex Convention Ltd, Temple House, 36 High Street, Sevenoaks, Kent TN13 1JG, UK. (YB no A 2501)
- 1978 Sep 18-22
 Int conference on quantum chemistry, biology and pharmacology. (USSR)
 Kiev (USSR)
 Or R E Christoffersen, President, ISQB, Chemistry Department, University of Kansas, Lawrence, Kansas 65045, USA.
- 1978 Sep 18-22
 UN Economic Commission for Europe/ECE/IO. Seminar on accidents in forestry operations. P : 40. (Poland)
 Sekocin (Poland)
 Timber Section, ECE/FAO Agriculture and Timber Division, Palais des Nations, CH-1211 Geneva 10. (YB n° B 4176/A 0971/A 2183)
- 1978 Sep 18-22
 Int Union of Pure and Applied physics. 3rd Int symposium on neutron capture gamma ray spectroscopy and related topics. P : 200 (inv). (USA)
 Upton (LI, USA)
 R E Chrien, Department of Physics, Brookhaven National Laboratory, Upton, LI, NY 11973, USA. (YB no A 2768)
- 1978 Sep 18-23
 1st South American congress on psychopedagogy ; Today's psychopedagogy. Buenos Aires (Argentina)
 Buenos Aires (Argentina)
 I Congreso latinoamericano de Psychopedagogia, Sarmiento 1562 3o piso 3, 1042 Buenos Aires.
- 1978 SEP 18-25
 Int Atomic Energy Agency. General conference (Austria)
 Vienna (Austria)
 IAEA, POB 590, A-1011 Vienna. (YB no A 1383)
- 1978 Sep 18-27
 United Nations. Committee on Natural Resources. 3rd special session. (USA)
 New York (USA)
 UK, New York, NY 10017. (YB no A 3375)
- 1978 Sep 18-Oct 6
 United Nations Industrial Development Organization. Seminar on management and training in public enterprises. (Yugoslavia)
 Ljubljana (Yugoslavia)
 UNIDO, POB 707, A-1011 Vienna. (YB no. B 3386)
- 1978 Sep 19-21
 European Federation of Corrosion, Working Party on Stress Corrosion Test Methods. Colloquium ; Electrochemical test methods for stress corrosion cracking. (France)
 Firminy (France)
 Prof R N Parkins, Dept of Metallurgy and Engineering Materials, The University of Inrain 52, Innsbruck. (YB No A 0728)
- 1978 Sep 19-21
 European Broadcasting Union. Ad-hoc Working party on data transmission systems in broadcasting. (France)
 Rennes (France)
 EBU, 1 rue de Varembe, CH-1211 Geneva 20. (YB n° A 0598)
- 1978 Sep 19-22
 Int Association on Water Pollution Research. Specialized conference on aeration systems. (Netherlands)
 Amsterdam (Netherlands)
 c/o ICSU, 51 Bd de Montmorency, F-7601G Paris. (YB n° A 1379)
- 1978 Sep 19-22
 Conference Secretariat, Institution of Electronic and Radio Engineers, 99 Grouser Street, London WC1E 6AZ, UK. (UK)
 Canterbury (UK)
- 1978 Sep 19-22
 Int Association on Water Pollution Research. Specialized conference on aeration systems. (USA)
 UN, New York, NY 10017. (YB n° A 3375)
- 1978 Sep 20-22
 Int conference on labour relations in S E Asia. P : 500. (Hong Kong)
 HONG KONG (Hong Kong)
 c/o Miss Stumer, The Secretariat, 22nd fl., Hutchison House, Hong Kong.
- 1978 Sep 21-23
 Giorgio Val le, Facolta di Ingegneria, Università di Bologna, Istituto di Elettronica, Viale Risorgimento 2, I-40136 Bologna. (Italy)
 Bologna (Italy)
- 1978 Sep 21-29
 Int Federation for Information Processing, TO 4. Working conference on education in health care informatics : Needs, problems, plans. (Germany, Fed Rep)
 Munich (Germany, Fed Rep)
 3 rue du Marché, CH-1204 Geneva. (YB n° A 1828)
- 1978 Sep 25-28
 Comité Int sur les Relations Publiques et la Réadaptation. Séminaire sur l'image sociale du handicapé et le rôle de l'information : 1. Analyse du matériel d'information existant sur les handicapés. 2. image sociale du handicapé et attitude du public à l'égard de son intégration. 3. information et intégration sociale du handicapé. (France)
 Paris (France)
 Comité int sur les relations publiques. 54 Zoodhou Pigis Street, Athens 145.
- 1978 Sep 25-29
 General conference on physics. P : 400. (Austria)
 Innsbruck (Austria)
 Ferdinand Cap, Institute for Theoretical Physics, University of Innsbruck, Innrain 52, Innsbruck.
- 1978 Sep 25-29
 5th Int ocean development conference. P : 1000. C : 20. ex. (Japan)
 Tokyo (Japan)
 Secretary General 5 Nakajima, Secretariat, 5th Int Ocean Development conference and exhibition, c/o Japan Management Association, 3-1-22 Shiba-Koen, Minato-ku, Tokyo 105.
- 1978 Sep 25-30
 5. Kolloquium über technische Anwendung und Verarbeitung von Kunststoffen 78. (Hungary)
 Sopron (Hungary)
 Wissenschaftlicher Verein für Maschinenbau. Postfach 451, H-1372 Budapest.
- 1978 Sep 25-30
 Int Organisation of Hotel and Restaurant Associations. Annual congress. (Yugoslavia)
 Zagreb (Yugoslavia)
 HO-RE-CA, Gotthardsstrasse 61, CH-8027 Zurich. (YB n° A 2742)
- 1978 Sep 26-28
 Int symposium on prophylactic approach to hypertensive diseases, P : 850. C : 40. (Japan)
 Shimane (Japan)
 c/o Kyoto Int Conference Hall, Takara-ike, SaKyo-ku, Kyoto 606.

1978 Sep 26-29 Hameln /Weser (Germany, Fed Rep)
Federation of European Chemical Societies. 2nd Conference on organometallic chemistry.: Regio-, stereo- and cation-selectivities in organometallic reactions, fundamental aspects of the control of organometallic reactions, and the relationship between the structure and the reactivity of organometallic compounds (YB no B 4925)
Prof Dr H Lehmkuhl, Max-Planck-Institut für Kohlenforschung, POB 01 13 25, D-4330 Mulheim a.d. Ruhr, Germany Fed Rep.

1978 Sep 26-29 Leuven (Belgium)
European conference on labour laws and industrial relations, prof R Bianpain, KUL, Institute for Labour Laws, B-3000 Leuven.

1978 Sep 26-29 Nottingham (UK)
Institution of Corrosion Science and Technology. 19th corrosion science Symposium. 14 Belgrave Square, London SW1X 8PS, UK.

1978 Sep 27-29 Kyoto (Japan)
Int Federation for information Processing, TC 6. Meeting.
3 rue du Marché, CH-1204 Geneva.

1978 Sep 27-29 Vienna (Austria)
Int Association for Mathematics and Computers Simulation. Symposium on Simulation of control systems with special emphasis on modeling and redundancy. (YB n° A 1174)
Univ. Prof Dr Inge Troch, Inst. of Techn. Mathematik, Gusshausstrasse 27-29, A-1040 Vienna.

1978 Sep 27-Oct 2 Athens (Greece)
Int Union of Geological Sciences. 7th Int congress on Mediterranean neogene. «YB n° A 2723»
IUGS, Dr S van der Heide, Rijks Geologische Dienst, POB 379, Haarlem, Netherlands.

1978 Sep 28-29 Paris (France)
Conférence int sur l'alimentation du bétail. P: 250
Melle Benadette Stengel, Relations Extérieures, Centre Int de Paris, CIP N°1, F-75853 Paris cedex 17.

1978 Sep 28-30 Bratislava (Czechoslovakia)
8th Donau-symposium on psychiatry.
nische Gesellschaft, Mickiewiczova 18, 888322 Bratislava.

1978 Sep 28-30 Lausanne (Switzerland)
World Psychiatric Association, Section of Psychotherapy. Int symposium on psychotherapy of schizophrenia. (YB n° A 3577)
Prof C Muller, Hôpital de Cery, CH-1008 Lausanne-Prilly, Switzerland.

1978 Sep 28-Oct 2 Geneva (Switzerland)
Congrès-Exposition « Anti-Incentie 78... »
Orgexpo, Palais des Expositions, CH-1211 Geneva 4.

1978 Sep 29-30 Bologna (Italy)
3rd Int conference on bio-impedance.
G Pallotti, Physics Institute "A. Righi", University of Bologna, Via Imerio 46, I-40126 Bologna.

1978 Sep end (Greece)
Int Union of Alpinist Associations. General assembly. (YB n° A 2684)
29 rue des Délices, CH-1211 Geneva 11.

1978 Sep Bologna (Italy)
Int Federation for Information Processing. Meeting: Computer applications in engineering design. (YB n° A 1828)
IFIP, 3 rue du Marché, CH-1204 Geneva.

1978 Sep Brussels (Belgium)
Association Européenne du Personnel des Organismes de Sécurité Sociale. Congrès.
EUROS, Mr Range, Secrétaire général, avenue de Tenvueren 211 B-1150 Brussels.

1978 Sep (France)
4e Colloque int sur les problèmes médicaux du ski de compétition
Dr A Bouvet, 13 rue de la Poste, F-74000 Annecy.

1978 Autumn Berlin (West)
European Travel Commission. Meeting. P: 30. (YB n° A 4394)
Kongresshalle Berlin, John-Foster-Dulles Allée 10, D-1000 Berlin 21.

1978 Oct 2-4 Edinburgh (UK)
European Federation of Corrosion, Institution of Corrosion Science and Technology/Institute of Marine Engineers. Meeting: North sea corrosion - what have we learnt? ; Cathodic protection; protective coatings; diving and ecology. (YB no A 0728)
The Institute of Marine Engineers, 76 Mark Lane, London EC3R 7JN, UK.

1978 Oct 2-6 Kathmandu (Nepal)
(YB n° A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Oct 2-6 Paris (France)
ONG Standing Committee. 4th standing Committee meeting.
Unesco, Place de Fontenoy, F-75700 Paris.

1978 Oct 2-13 Geneva (Switzerland)
UN Conference on Trade and Development. Committee on Economic Co-operation among Developing Countries, 2nd session. (YB no B 3381)
Palais des Nations, CH-1211 Geneva 20.

1978 Oct 3-4 Brussels (Belgium)
Benelux Society of Metallurgy /Technologisch Instituut-K.V.IV. Symposium: Le zinc dans les techniques modernes. (YB no B 0439)
c/o FABl, Square Marie-Louise 28. Bte 1, B-1040 Brussels.

1978 Oct 3-6 Paris (France)
NGO Standing Committee/World Federation of Trade Unions. Colloque sur l'éducation contre l'apartheid. (YB no A 3537)
WFTU, Namesi Curieových 1, 11688 Prague 1, Czechoslovakia.

1978 Oct 4-6 Berlin (West)
Int Polartagung der Deutschen Gesellschaft für Polarforschung. P- 120
Kongresshalle Berlin, John-Foster-Dulles Allée 10, D-1000 Berlin 21.

1978 Oct 5-6 Tokyo (Japan)
sembly. P: 350, C: 30. (YB n° A 1976)
The Federation of Pharmaceutical Manufacturers' Association of Japan Tokyo Vakugyo Kaikan 6th Floor, 2-9, Nihombashi Honcho, Chuo-ku, Tokyo.

1978 Oct 5-8 Ottawa (Canada)
Richelleu Int. Int congress. (YB n° B 2776)
R G Mathias, 260 rue Dalhousie (bureau 303), Ottawa, Ontario K1N 3V1, Canada.

1978 Oct 5-13 Geneva (Switzerland)
United Nations. Int Lead and Zinc Study Group. (YB n° A 3375)
Palais des Nations, CH-1211 Geneva 20.

1978 Oct 9-10 London (UK)
Institute of Physics, Quantum Electronics Group/Royal Meteorological Society/Society of Chemical Industry. Meeting on atmospheric sensing with lasers.
The Meetings Officer, The Institute of Physics, 47 Belgrave Square, London SW1X 8QX, UK.

1978 Oct 9-13 Brussels (Belgium)
Int council for Building Research, Studies and Documentation. Commission W62 Water Supply and Drainage for Buildings. Seminar: Plastic pipes and fittings; influence on flushing of a reduced capacity and flow-rate WC; requirements for a code of performance. (YB n° A 1723)
POB 20704, NL-3001 JA Rotterdam.

1978 Oct 9-14 Warsaw (Poland)
European Coordination Centre for Research and Documentation in Social
mentation. (YB n° B 0614)
ECSSID, Grünangergasse 2, A-1010 Vienna.

1978 Oct 9-23 Geneva (Switzerland)
Int Union for the Protection of New Varieties of Plants. Conference diplomatique sur la revision de la convention UPOV. (YB n° A 2671)
32 chemin des Colombettes, CH-1211 Geneva 20.

1978 Oct 10-13 Mannheim (Germany, Fed Rep)
Int Writers Guild. Congress. (YB n° A 2822)
IWG, 105 Carlton Street, Toronto M8 1M2, Canada.

1978 Oct 11-13 Wiesbaden (Germany, Fed Rep)
Deutscher Verband für Schweisstech. Grosse Schweisstehntechnische tagung.
Aachener Strasse 12, D-4000 Dusseldorf, Germany, Fed Rep.

1978 Oct 11-Nov 3 Geneva (Switzerland)
United Nations. Int Narcotics Control Board. (YB n° A 3375)
Palais des Nations, CH-1211 Geneva 20.

1978 Oct 12-13 Salzburg (Austria)
Austrian Society for Geomechanics. 27th Geomechanics colloquy: 1) The new Austrian tunnelling method: progress in theoretical treatment and practical application, 2) effort for standardization in tunnelling, 3) engineering geological evaluation of exploratory galleries and test galleries, 4) stability and protection of high rock slopes.
Paracelsusstrasse 2, A-5020 Salzburg.

1978 Oct 13-14 Lausanne (Switzerland)
World Psychiatric Association. Section of Geriatric Psychiatry European Working Group of Geronto-Psychiatry. Symposium. (YB n° A 3577)
Prof C Muller, Hôpital de Cery, CH-1008 Lausanne-Prilly, Switzerland.

1978 Oct 14 Venice (Italy)
Int Federation for Information Processing, TC 8. Meeting. (YB n° A 1828)
3 rue du Marché, CH-1204 Geneva.

1978 Oct 15-19 New York (USA)
American Society for Information Science. Annual meeting.
ASIS, 1155 Sixteenth Street NW, Washington DC 20036, USA.

1978 Oct 15-20 Guatemala (Guatemala)
Inter-American Planning Society. 12th Congress. P: 1000. (YB no A 1093)
Asociacion Guatemalteca de Planificación. c/o Arq. Hermes Marroquin, 10a Avenida « A » N) 2-56, Zona 15, Guatemala.

1976 Oct 16-18 Varna (Bulgaria)
 Conference on Corrosion and corrosion protection.
 Central Council of the STU Technical Progress Dept., Conference on Corrosion and Corrosion Protection, 180 Rakoski Street, BG-1000 Bulgaria.

* 1978 Oct 16-Nov 10 Geneva (Switzerland)
 UN Conference on Trade and Development. UN Conference on on Int code of conduct on transfer of technology. (YB n° B3381)
 Palais des Nations, CH-1211 Geneva 10.

1978 Oct 17-18 Brussels (Belgium)
 European Broadcasting Union. Sub-Group T4 (Sound development), meeting. (YB n° A 0598)
 EBU, 1 rue de Varembe, CH-1211 Geneva 20.

* 1978 Oct 17-20 Brussels (Belgium)
 Académie de Sciences d'Outremer. Meeting. P : 200.
 Mme Péro, rue Defoqz 1, B-1050 Brussels.

1978 Oct 17-20 (France)
 Int Union of Railways/Int Union of Private Railway Truck Owners' Associations. Jointly meeting. (YB n° A 2772/A 2758)
 UIC, 14-16 rue Jean-Rey, F-75015 Paris.

1978 Oct 17-26 Yalta (USSR)
 Inter-Union Commission on Geo-dynamics. Symposium : Lithosphere asthenosphere interaction : its role in tectonic processes; ICG bureau and commission meetings. (YB n° B 4486)
 c/o ICSU, 51 Bd de Montmorency, F-75016 Paris.

1978 Oct 18-20 Geneva (Switzerland)
 United Nations. Panel of External Auditors of the UN, the Specialized Agencies and the Int Atomic Energy Agency. (YB n° A 3375)
 Palais des Nations, CH-1211 Geneva 20.

1978 Oct 19-21 Berlin (West)
 Europäische Warenborse 1978, P. 1200.
 Kongresshalle Berlin, John-Foster-Dules Allee 10, D-1000 Berlin 21.

1978 Oct 20-22 Brussels (Belgium)
 Pre-congress to the int congress of medical sexology of Rome : * int symposium on prostitution in modern society >
 c/o Tourist information Brussels, rue du Marché-aux-Herbes 61, B-1000 Brussels.

1978 Oct 20-23 Brussels (Belgium)
 Union Int des Agents de la Diffusion de la Presse et de l'Édition. Congrès, c/o Bruxelles Congrès. TIB. rue Marché aux Herbes 61, B-1000 Bruxelles

* 1978 Oct 21-25 Brussels (Belgium)
 Int Reclamation Bureau. Congress. P : 700-1000. C : 33. (YB n° A 2403)
 Place du Samedi 13, B-1000 Brussels.

1978 Oct 21-29 Courtral (Belgium)
 Interiors 78 - 6th Int biennial on creativity of interior design.
 Handelskammer, Casinoplein 10, B-8500 Courtral.

1978 Oct 22-24 Kyoto (Japan)
 3rd Int sales congress of life insurance. P : 1600. C : 13.
 Life Underwriters Association of Japan, Ikeba Bldg, 1-10, Nihombashi Muromachi, Chuo-ku, Tokyo.

1978 Oct 23-25 Tampa (Fla USA)
 ASTM Committee C 16 on Thermal and Cryogenic Insulations. Thermal insulation conference.
 D. McElroy, Oak Ridge National Laboratory, POB X, Oak Ridge, TN 37830.

1978 Oct 23-27 Borne (Netherlands)
 European Bureau of Adult Education. 25th Anniversary conference. (YB n° A 0601)
 Nieuweweg 4, POB 367, 3800 AJ Amersfoort, Netherlands.

1978 Oct 23-27 Melbourne (Australia)
 Int Association on Water Pollution Research. Meeting : Developments in land methods of waste water treatment and utilization. (YB n° A 1379)
 IAOWPR, POB 395, Pretoria, South Africa.

1978 Oct 23-28 Buenos-Aires (Argentina)
 Latin American Medical Rehabilitation Association. 7th Conference. (YB n° B 0909)
 ALMAR, Centre National de Rehabilitation, Vuelta El Pescocozon, Calle La Guyanita, Caracas, Venezuela.

* 1978 Oct 25-27 Elsinore (Denmark)
 IFID Applied Information Processing Group (IAG). Danish IAG. Conference : Impact of computers and information systems on individuals and organizations. P : 200. C : 10. (YB n° B 3648)
 Spadille Congress Service, Sommervy 3, DK-3100 Homback.

1978 Oct 25-27 Geneva (Switzerland)
 UN Economic Commission for Europe. Preparatory meeting for the seminar on improved recovery techniques for the extracting and processing of primary forms of energy. (YB n° B 4176)
 Palais des Nations, CH-1211 Geneva 10.

1978 Oct 26-28 Monte Carlo (Monaco)
 Int Federation of Newspaper Publishers. 6th Symposium : Management and marketing : Serving the readers better. (YB n° A 1965)
 FIEJ, 6 rue du Faubourg Poissonnière. F-75010 Paris.



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1978 Oct 28-NOV 1
Utrecht (Netherlands)
Dutch Association Of Cost Engineers/Association of Cost Engineers Ltd.
London. 5th Int cost engineering congress.
C/O FABI, Square Marie-Louise 28, Btc 1, B-1040 Brussels, Belgium.

1978 Oct 28-Nov 4
Hong Kong (Hong Kong)
The Int Chinos Snuff Bottle Society. 10th Annual convention. P: 200.
Int Chinese Snuff Bottle Society, 2601 North Charles Street, Baltimore.
Maryland 21213, USA.

1978 Oct 30-Nov 4
Hilversum (Netherlands)
European Broadcasting Union. 2nd Workshop on studio and microphone
technique. (YB n° A 0598)
EBU. 1 rue de Varembe, CH-1211 Geneva 20.

1978 Oct (1 day)
New York (USA)
United Nations. Pledging Conference on the UN Development
Programme
and the UN Capital Development Fund.
UN, New York, NY 10017.

1978 Oct 31-Nov 4
Bologna (Italy)
inflammation process, c) experimental approaches to inflammation, d) the
Organizing Secretariat, Dr Emanuela Folco - FGL, via Monte Napoleone 23, I-
20121 Milan.

1978 oct
Ankara (Turkey)
Int Pédiatrie Association, Committee for int Year of the Child. Meeting.
(YB n° A 2336)
IPA, Château de Longchamp, Bois de Boulogne, F-75016 Paris.

1978 Oct
Louvain la Neuve
(Belgium)
Séminaire pour chercheurs et étudiants latino-américains : • L'intégration
de l'Amérique Latine •.
Prof Cerexne, Centre d'Etudes Européennes, Halles universitaires, B-1348
Louvain la Neuve.

1978 Nov 1-10
Hong Kong (Hong Kong)
Asian Pacific regional conference of the Royal Life Saving Society. P : 100.
Hong Kong Life Guard Club and HK Branch of the Royal Life Saving Society,
c/o Rm 804, Peter Building, 58 Queen's Road, C, Hong Kong.

1978 Nov 3-7
Tokyo and Kyoto (Japan)
Institute of Electrical and Electronics Engineers, Int conference on cyber-
netics and society. P : 400, C : 20, (YB n° B 0621)
Managing Science Development Foundation, c/o Seikyo Kai, 4-1-13, Sen-
dagaya, Shibuya-ku, Tokyo.

1978 Nov 6-9
Hamburg (Germany, Fed Rep)
UN Economic Commission for Europe. Seminar on the combined production
of electric power and heat. (YB n° B 4176)
Palais des Nations, CH-1211 Geneva 10.

1978 Nov 6-9
Tokyo (Japan)
Int Society on Vasopetize. Int symposium on Kinins. P : 250, C : 25.
Prof H Moriya, Secretary General, c/o Science University of Tokyo, 12
Funagawara-machi, Ichigaya, Shinjuku-ku, Tokyo 167.

1978 Nov 6-11
Wageningen (Netherlands)
Int Commission of Agricultural Engineering, Section II Symposium : Stan-
(YB n° A 1548)
Organizing Committee, Centrum Techniek, POB 43, ML-5700 AA-Wageningen.

• 1978 Nov 6-15
Lima
Pan American Railway Congress Association. 14th Congress.
(YB n° A 3071)
ACPF, Av 9 de Julio 1925. Piso 13, Of. 1301, 1332 Buenos Aires, Argentina.

1978 Nov 6-17
Geneva (Switzerland)
Int Labour Organization, Governing Council. 20th session.
ILO, 4 rue des Morillons, CH-1211 Geneva 22. (YB n° A 2183)

1978 Nov 8-11
Cannes (France)
Int Convention Organizers. Meeting.
c/o IHA Documentation Centre, 89 Faubourg Saint Honoré, F-75008 Paris.

1978 Nov 8-Dec 1
London (UK)
Int Maritime Consultative Organization. Conference on Training.
(YB n° A 1117)
101-104 Piccadilly, London W1V 0AE, UK.

• 1978 Nov 12-18
Jerusalem (Israel)
Int Organization for Motor Traders and Repairs. 31st Congress. P : 400.
(8 n° A 2312)
Kenes, POB 16271, Tel Aviv, Israel.

1978 Nov 13-15
Geneva (Switzerland)
Int Air Transport Association. 34th Annual general meeting.
(YB n° A 1149)

1978 Nov 13-24
Geneva (Switzerland)
Un Conference on Trade and Development. Negotiating Conference on Res-
trictive Business Practices. 1st session.
(YB n° B 3381)
Palais des Nations, CH-1211 Geneva 20.

1978 Nov 16-17
Milan (Italy)
via Monte Napoleone 23, I-20121 Milan.

1978 Nov 20-Dec 1
Geneva (Switzerland)
United Nations, Committee of Experts on the Transport of Dangerous Goods
10th session. (YB mo A 3375)
Palais des Nations, CH-1211 Geneva 20.

1978 Nov 22-23
Hong Kong (Hong Kong)
Seatrade conference. P : 450.
Mr Anthony Nash, Senior Director, Seatrade Publications Ltd Fairfax House
Colchester CO1 1RJ UK.

1978 nov 25-26
Brussels (Belgium)
Mr Missal, avenue Paul Deschanel 167, B-1030 Brussels.

• 1978 Nov 27-Dec 1
Jerusalem
(Israel)
Kenes, POB 16271, Tel Aviv.

1978 Nov 28-29
Hamburg (Germany, Fed Flop)
3. Int Kolloquium "Schweissen In der Kerntechnik"
Deutscher Verband fur Schweisstechnik, Aachner Strasse 12, D-4000 Dussel-
dorf.

1978 Nov 29-Dec 3
New York (USA)
R P Hylton, Jr, School of Dentistry, University of Minnesota Health
Sciences Unit A, Suite 7174, Minneapolis, 55455, USA.

1978 Nov
Brest (France)
Scientific Committee on Oceanic Research 14th General assembly.
(YB n° B 3210)
SCOR, R I Curie, Dunstaffnage Marine Research Laboratory, POB 3, Oban,
Argyll PA34 4AD, UK.

1978 Nov
Paris (France)
vention. P : 80.
(YB no A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Dec 1-2
Bari (Italy)
Societa Italiana di Terapia Intensiva. 2nd Congress.
AISC, via J B Martini 6, I-00198 Rome.

1978 Dec 4-5
Tel Aviv (Israel)
Israel Society of Gerontology. Int meeting. P : 600.
Kenes, POB 16271, Tel Aviv.

1978 Dec 4-8
Tokyo (Japan)
United Nations University, Council. (YB n° B 2488)
29th Floor, Toho Semei Building, 15-1 Shibuya 2-chome, Shibuya-ku, Tokyo
150.

1978 Dec 5-8
Toronto (Canada)
mistry. (YB n° A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Dec 6-8
Geneva (Switzerland)
Int Union for the Protection of New Varieties of Plants. Council.
(YB n° A 2671)
32 chemin des Colombettes, CH-1211 Geneva 20.

1978 Dec 6-8
Geneva
(Switzerland)
tional and int energy data banks. (YB n° B 4176)
Palais des Nations, CH-1211 Geneva 10.

1978 Dec 11-15
Baden (Austria)
performance evaluation of numerical software. (YB n° A 1328)
3 rue du Marché, CH-1204 Geneva.

1978 Dec 11-15
New Delhi (India)
(YB no A 3383)
Place de Fontenoy, F-75700 Paris.

1978 Dec 18-19
London (UK)
Institute of Physics, Materials and Testing Group. Meeting on materials in
The Meetings Officer, The Institute of Physics, 47 Belgrave Square, London
SW1X 8QX, UK.

1978 Dec 18-22
New Delhi (India)
World Intellectual Property Organization/Unesco. Séminaire sur le droit
d'auteur. (YB no A 3635/A 3333)
WIPO. 32 chemin des Colombettes, CH-1211 Geneva 20.

1978 Dec
Milan (Italy)
Fondazione Giovanni Lorenzini. Symposium on " Antibiotics and hospitals ".
via Monte Napoleone 23, I-20121 Milan.

