

The SIPTA Newsletter

Society for Imprecise Probability Theory and Applications

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Message from the president

By Gert de Cooman, SIPTA president

As its newly elected President, I am happy to announce that SIPTA – the Society for Imprecise Probability Theory and Applications – was founded a few months ago. To quote from its articles, SIPTA wants to “advance and promote the theory and applications of imprecise probabilities; and disseminate and promote the idea that imprecision is an important aspect of probabilistic modelling, and that this imprecision should therefore be taken into account in realistic probabilistic models.” SIPTA also wants to “promote contacts and exchange information among scientists and practitioners in different fields and from different countries interested in the theory and applications of imprecise probabilities, and coordinate their activities.”

One of the important activities of the Society will be the dissemination of a newsletter; and you are looking at the first of hopefully many more to come. With this newsletter, we want to keep you informed about SIPTA’s activities.

SIPTA also has a web site (<http://www.sipta.org>). At this point it still very much looks like the old web site for the Imprecise Probabilities Project, but we are working hard on an update. We now have an even distribution of responsibilities for the different aspects and parts of the web site, which we hope will allow us to keep it in better shape.

The first event of importance that SIPTA will organise, is the ISIPTA ’03 conference, which is due to take place at the University of Lugano, Lugano, Switzerland, 14-17 July 2003 (for more details, see the Call for Papers in this newsletter). We would like to encourage you to submit your relevant work to the conference.

At this point, SIPTA is still a fairly closed society, mainly because our first aim was to provide a secure legal background against which a

number of activities could take place, such as the organisation of the biennial ISIPTA conferences, and the maintenance of the web site. But we are currently rewriting the articles in such a way that SIPTA will become an organisation whose membership is open to anyone interested in the theory and applications of imprecise probabilities. This important work should be finished before SIPTA’s next general meeting, to be held in Lugano during ISIPTA ’03, so that the change of statutes can be approved by that meeting.

I am looking forward to being able to welcome you as new SIPTA members by that time.

Message from the editor

By Fabio G. Cozman, newsletter editor

This is the first issue of the SIPTA newsletter; I would like to give a warm welcome to all readers. This issue opens with a truly great contribution by Prof. Henry Kyburg Jr., where he discusses the history of imprecise probabilities and describes his own efforts to connect relative frequencies to probabilities. We also have a report from the Special Track on Imprecise and Indeterminate Probabilities in the FLAIRS 2002 conference, the Call for Papers of the coming ISIPTA ’03, and the articles of the Society for Imprecise Probability Theory and Applications.

I hope to keep a History section in the follow-

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ing issues of the newsletter, and to add a section on available software for dealing with imprecise probabilities; hopefully the next issue will bring something on these lines. I would also like to have a list of conferences and journals where material on imprecise probabilities can be published. If you know of any event or publication that should be of interest to members of SIPTA, send a message about it to fgcozman@usp.br.

Cheers!

History section

The following text was read by Henry Kyburg Jr. at the ISIPTA '01 banquet. We thank Prof. Kyburg for allowing us to reproduce his text here.

Here we all are, a small but united minority of those concerned with probability. We are united in thinking that SOME form of imprecise probability is essential for correctly dealing with uncertainty.

But as any eavesdropper around these meetings would know, for all this agreement, there are also a lot of things that a lot of us disagree about.

Some of these differences are very deep, and, I think, can be traced back to those to whom the beginnings of imprecise probability are often attributed.

The deep differences I have in mind concern the interpretation of probability. In classic terms: subjective degree-of-belief interpretations, logical measure interpretations, and objective or frequency-based interpretations.

John Maynard Keynes, in his *Treatise on Probability* [10], was the first that I know of to cast doubt on the conventional numerical treatment of probability. He was quite adamant in insisting that probabilities could only be partially ordered.

He made it quite clear that probabilities were not only not always numerical, but might well be not even COMPARABLE. He says that there are "... exceedingly strong reasons for [doubting] ... whether any two probabilities are in every case even theoretically capable of comparison in terms of numbers ..." (p. 28). He rejects explicitly the contention that we can say in the case of every argument whether it is more or less likely than not. (p. 30) And "... there are some pairs of probabilities between the members of which no comparison of magnitude is possible ... it is not always possible to say that the degree of our rational belief in one conclusion is either

equal to, greater than, or less than the degree of our belief in another." (p. 34)

Now it is interesting that many of those who were impressed with this idea of intuitive probability in practise quite quickly abandoned the idea of non-comparability. Thus Bernard Koopman, who provides an elegant axiomatization of Keynes' ideas [11, 12], and introduces upper and lower probabilities explicitly, quickly goes on to say that when $P^*(A) = P_*(A)$ then we can write $P(A)$ as a real number and get on with our serious work. Koopman ends "The Axioms and Algebra of Intuitive Probability" "We thus reach ... our final goal, having defined the numerical probability and established its conventional properties ..." (p.292)

It is only about 1960 that people start taking imprecise probability seriously — as more than a step on the way to conventional real-valued probabilities. I think there is a philosophical reason for this. Rudolf Carnap [2] and Carl Hempel, [5] in their discussion of the foundations of measurement, present the ranking of concepts this way:

Absolute: X is Long.

Comparative: X is longer than Y .

And then real science:

Quantitative: the length of X is 1.234.

The comparative relation is somehow thought of as trivial. Our own Terry Fine, in his famous book *Theories of probability* [3] presents a comparability requirement as his second axiom, on p. 17: right after non-triviality:

C1 $A \preccurlyeq B \vee B \preccurlyeq A$

This is a very powerful axiom. It lands us in a lattice, and as Fine points out, eliminates the need for two of Koopman's axioms.

The real history of imprecise probability is usually taken to start about 1960. Between 1959 and 1962 at least five papers appeared that explicitly proposed non-real-valued probabilities. All involved the rejection of the axiom of comparability.

I. J. Good's contribution to the 1960 meeting on the International Union for the History and Philosophy of Science, "Probability as the measure of a non-measurable set," [4] is often cited as one of the basic papers introducing imprecise probabilities. Good is quite explicit that there is a logical relation of confirmation between a statement and the background knowledge that serves for evidence.

Logical probability = Credibility = subjective probability of an agent who is "perfectly rational

and therefore presumably infinitely large.”

P represents credibility; being finite, we don’t know P , but P is a classical probability function over the statements of the language. But we don’t know P precisely.

P' represents our probability judgment; it is this that is imprecise. “Following Keynes and Koopman, I assume that the P' s are only partially ordered.”

In this picture the existence of (unknown) classical probabilities P in the black box serves to impose constraints on our personal probabilities P' . We get quite a lot of structure to guide our treatment of judgmental probabilities.

While the evidential relation is captured by a logical probability, that probability is hidden in a black box. What is accessible to us are various approximations that give us *bounds* on that black box probability. It is these judgments that really concern us in probability; Good takes the imprecision of probability as pervasive and fundamental.

A contrast to Good’s logical interpretation of probability is provided by the 1961, 1962, and 1965 papers by C. A. B. Smith. While Good is taking (our) probabilities to approximate those of a perfectly rational agent, Smith is taking them to be revealed in the *decisions* of a reflective but otherwise real agent. Thus where Ramsey, the arch subjectivist, supposes there is a number that corresponds to a betting ratio of which the agent would take either side [13], Smith, more realistically, supposes that there are *two* numbers, one representing the least odds at which the agent would bet *on* the proposition in question, the other representing the least odds at which the agent would bet *against* that proposition.

These two numbers represent a constraint on one’s willingness to bet on either side of a proposition: on its truth or on its falsity. More generally, there are other axioms that these pairs of numbers must satisfy in order that the agent be protected against sure loss.

Let us call these Rational Bookie constraints, since to violate it — even to have the probability of $\neg A$ be 1 minus the probability of A — would expose the agent who covers all bets to a possibly certain loss, in the sense that a wily customer who was richer than the bookie could enhance the value of his own money by tying up all the money of the agent in break-even bets.

Nevertheless, this leaves open an enormous range of possible degree-of-belief functions. It is

not surprising that various people have come up with various additional “rational constraints.” One of the things we have been doing here has been weighing and evaluating and comparing some of these possibilities.

Nor is it surprising that these possibilities are not always consistent with each other.

The third source of imprecise probability, from about this same time, is me. I contributed a paper to the same general meeting at which I. J. Good offered his measure of a non-measurable set interpretation. An initial public statement of the idea appeared in a couple of papers presented to the Association for Symbolic Logic in 1959 [7, 8]; but the first relatively complete statement was in *Probability and the Logic of Rational Belief* in 1961 [9].

What may be interesting is that my approach was based on quite different intuitions. While all of us were inspired, to some degree, by Keynes, Good latched onto the idea of the *logic*, in the sense nearly of Carnap [1], of a “perfectly rational” agent; our probability is just an approximation to this logic, and therefore imprecise. That transition was Keynes to Koopman to Good.

Smith took the economic arguments seriously; he saw a shortcoming in Ramsey’s dutch book argument and repaired it; so he is thinking of constraints on belief-as-behavior that will protect the agent’s economic interest. The subject matter is *psychology* or *decision theory*. The transition in this case: Keynes to Ramsey to Smith.

I was impressed by the frequency arguments of Russell and others: it seemed to me first that we DO know some relative frequencies, approximately, and second that our degrees of belief *should* be constrained by these approximate relative frequencies. When Keynes argues that probabilities — rational degrees of belief — are not comparable, it seemed obvious to me that this was just a consequence of the fact that intervals, representing the relative frequencies that I took to underlie all probabilities, don’t have a natural ordering relation.

Now getting from knowledge of frequencies and other background knowledge to probabilities is tricky. I think, 40 years after I thought that I had the problem solved, that maybe, just maybe, I DO have the problem solved: there is a solution in the new book, coming out this August, *Uncertain Inference* [6], which seems to me right.

Oh, all right. Roughly, here’s the idea —

only marginally different from the idea I pushed in 1959. The frequencies on which I claim we base our probabilities are frequencies in *reference classes*. There are many references classes that are appropriate for any given proposition:

A coin toss may be thought of as the toss of a coin, the toss of a quarter, the toss of a coin by Sally, and in each of these possible reference classes we may know something about the frequency of heads.

An applicant for insurance may be thought of as a 40 year old male, as a 40 year old male college professor, as a 40 year old victim of aids, . . . Again we may know something about the frequency of death within the year in each of these potential reference classes.

The problem facing the attempt to base probabilities on these frequencies is that there are too many of them; we need principles to remove the irrelevant ones from consideration.

There are three sorts of reasons that I think can rule out a potential reference class: Specificity, Richness, and Precision.

Two potential reference classes DIFFER when the interval mentioned in neither one is included in the interval mentioned in the other.

Specificity: If two potential reference classes DIFFER, but one is more specific than the other, we may ignore the less specific reference class.

We use the frequency of the ability to fly among penguins, rather than among birds in general, as a guide to our belief about Tweety's ability.

Fulness: If two potential reference classes DIFFER, but one is a marginal class, but the other is a class that makes use of a prior distribution, then the marginal data may be ignored.

If we know an urn is selected from a set of urns, and then a ball selected from that urn, (and we know the relevant numbers), we'll use the full joint distribution to guide our belief that a black ball will be selected.

Precision: If the interval mentioned in one reference class is a subinterval of that mentioned in another, and there is nothing (specificity; fulness) that rules out the narrower interval, then we may ignore the wider interval.

In 1959 I thought that reasons similar to these could lead to a single reference class. Now I think that is not the case, but that these rules can constrain our reasoning to a SET of reference classes. A probability interval is the cover of the intervals mentioned in those reference classes not ruled out by one of the three con-

ditions.

So every probability statement is based on our knowledge of some relative frequency or relative frequencies. Usually, but not always, these frequencies are empirical relative frequencies in the world. The exceptions are frequencies that are known a priori: for example that most subsets of a population reflect the character of that population. The imprecision of probabilities are a consequence of the fact that we don't know these empirical frequencies precisely; our knowledge is approximate.

Now the point of all this that I want to bring to your attention is that among these three early views concerning imprecise probability are three completely different ideas about what probability is.

Good takes probability to be a purely LOGICAL relation. Not being, as he puts it, infinitely large, we cannot capture that relation precisely, but must approximate it by judgments. Thus the best we can do to capture this theoretical logical relation is to impose bounds on it. OUR probabilities are therefore imprecise. A probability statement by an agent is an imprecise approximation to a logically precise relation.

Smith takes probability to be a purely PSYCHOLOGICAL quality, representing an agent's propensity to choose or act. This is something that IN ITSELF is not precise. It is vague, fuzzy, indeterminate. Since there is a range of circumstances under which the agent may decline to act, an agent's probability statement must be imprecise.

For me, probability is (IN A SENSE) EMPIRICAL. Every probability statement by an agent reflects what that agent knows about some relative frequency (or collection of relative frequencies) IN THE WORLD. Note that for me, as for Good and perhaps even for Smith, probability is an evidential, and therefore, in some sense "Logical" relation. What is interesting and curious is that for Good the source of the values of the relation was LOGICAL; for Smith, PSYCHOLOGICAL; and for me EMPIRICAL.

Do these views as to the source of probabilities make a difference to the structure of imprecise probability? The answer is that they do, of course.

But to spell all this out would hardly be an appropriate topic to start after a fine meal, if I could do it, and I rather expect that doing it well is beyond my abilities anyway. But in the papers over the past three days, we have seen

the tension between the pull of OBJECTIVITY — whether or not that is tied directly to frequencies — and the pull exercised by economics and DECISION theory, particularly in deviant characterizations of independence — and the pull of LOGICAL intuition.

Reject comparability, and the space is created for many moves in spelling out sets of constraints on imprecise probability. Will it be possible to satisfy all three groups of intuitions: the ones I have grouped under Good, Smith, and myself? I rather doubt it, since the three sets of intuitions seem largely orthogonal.

But let me end with one tentative suggestion. The system that I have advocated, based on objective knowledge about the world, has one thing going for it, and one thing against it.

What it has going for it is a kind of soundness result: if the probability of S is $[p, q]$ for the agent with knowledge K , then in between p and q of the worlds in which K is true, S will also be true. This seems to me a strong reason to take objective constraints to be essential. Those constraints MUST be satisfied. Other desiderata can tag along afterwards.

On the other hand, what this system has against it is the threat that probability intervals based on objective frequency knowledge will too often degenerate into uselessly broad intervals. (Note that precision keeps this from happening all the time, for example, in gambling, insurance, and the theory of errors of measurement.) If so, then we must turn to other sources to find a precise guide in life. Objective knowledge will take us only so far. Those other sources will also, I'm sure, be forms of imprecise probability, such as those we have been discussing.

Where the truth will lie, only the future will tell.

Henry E. Kyburg, Jr.

References

- [1] Rudolf Carnap. *The Logical Foundations of Probability*. University of Chicago Press, Chicago, 1950.
- [2] Rudolf Carnap. *Philosophical Foundations of Physics*. Basic Books, New York, 1966.
- [3] Terrence Fine. *Theories of Probability*. Academic Press, New York, 1973.
- [4] I. J. Good. Subjective probability as a measure of a non-measurable set. In Nagel, Suppes, and Tarski, editors, *Logic, Methodology and Philosophy of Science*, pages 319–329. University of California Press, Berkeley, 1962.
- [5] Carl G. Hempel. *Fundamentals of Concept Formation in Empirical Science*. University of Chicago Press, Chicago, 1952.
- [6] Henry E. Kyburg Jr. and Choh Man Teng. *Uncertain Inference*. Cambridge University Press, New York, forthcoming.
- [7] Henry Kyburg Jr. Probability and randomness i. *Journal of Symbolic Logic*, 24:316–317, 1959.
- [8] Henry Kyburg Jr. Probability and randomness ii. *Journal of Symbolic Logic*, 24:317–318, 1959.
- [9] Henry Kyburg Jr. *Probability and the Logic of Rational Belief*. Wesleyan University Press, Middletown, 1961.
- [10] John Maynard Keynes. *A Treatise on Probability*. McMillan and Co, London, 1952.
- [11] Bernard O. Koopman. The axioms and algebra of intuitive probability. *Annals of Mathematics*, 41:269–292, 1940.
- [12] Bernard O. Koopman. The bases of probability. *Bulletin of the American Mathematical Society*, 46:763–774, 1940.
- [13] F. P. Ramsey. *The Foundations of Mathematics and Other Essays*. Humanity Press, New York, 1931.

The Special Track on Imprecise and Indeterminate Probabilities at FLAIRS

The FLAIRS conference (International Florida Artificial Intelligence Research Society Conference) is a traditional venue for publications in all areas of artificial intelligence. FLAIRS is divided into a main track and a large number of special tracks. FLAIRS 2002 contained a Special Track on Imprecise and Indeterminate Probabilities, chaired by Choh Man Teng (from University of West Florida and Institute for Human and Machine Cognition). Some papers in the Special Track on Imprecise and Indeterminate Probabilities were presented together with papers on the

traditional Special Track on Uncertain Reasoning. The meeting was quite interesting, with a variety of themes and a diverse attendance from all corners of artificial intelligence research. The following papers were presented:

- Special Track on Imprecise and Indeterminate Probabilities
 - Algorithms for conditioning on events of zero probability, Fabio Gagliardi Cozman.
 - Semantics for interval probabilities, Henry E. Kyburg Jr.
 - Towards temporal reasoning using qualitative probabilities, Ahmed Y. Tawfik.
- Special Joint Track on Uncertain Reasoning and Imprecise and Indeterminate Probabilities
 - Toward a universal translator of verbal probabilities, Tzur M. Karelitz, Mandeep K. Dhami, David V. Budescu, Thomas S. Wallsten.
 - Indeterminate probability and change of view, Isaac Levi.
 - The reasonableness of necessity, Paul Snow.
 - A variation on the paradox of two envelopes, Mikelis Bickis, Eric Neufeld.
- Special Track on Uncertain Reasoning
 - Semantics and knowledge acquisition in Bayesian knowledge-bases, Eugene Santos Jr., Eugene S. Santos, Solomon Eyal Shimony.
 - A Bayesian approach to operational decisions in transportation business, Nils-Peter Andersson, Love Ekenberg and Aron Larsson.
 - Comparing alternative methods for inference in multiply sectioned Bayesian networks, Y. Xiang.
 - Fusion of possibilistic knowledge bases from a postulate point of view, Salem Benferhat, Souhila Kaci.
 - Conflict resolution in probabilistic multi-agent systems, S. K. M. Wong, Tao Lin.

Related events and journals

In this section we plan to list any events, journals, call for papers of any sort, and significant meetings that may be of interest to the SIPTA community. We would really appreciate if you could drop us a line on any news that could be in this section (send a message to the newsletter editor at fgcozman@usp.br).

We must certainly start with ISIPTA '03, the third edition of the International Symposium on Imprecise Probability Theory and Applications. Here is the Call for Papers.

ISIPTA '03
3rd International Symposium on Imprecise
Probabilities and Their Applications
July 14-17, 2003
Lugano, Switzerland
<http://www.sipta.org/~isipta03>

The ISIPTA meetings are one of the primary international forums to present and discuss new results on the theory and applications of imprecise probabilities. Imprecise probability has a wide scope, being a generic term for the many mathematical or statistical models which measure chance or uncertainty without sharp numerical probabilities. These models include belief functions, Choquet capacities, comparative probability orderings, convex sets of probability measures, fuzzy measures, interval-valued probabilities, possibility measures, plausibility measures, and upper and lower expectations or previsions. Imprecise probability models are needed in inference problems where the relevant information is scarce, vague or conflicting, and in decision problems where preferences may also be incomplete. Proceedings will be published by Carleton Scientific.

Themes of the symposium

Although the third symposium will be open to contributions on all aspects of imprecise probability, three main themes will be emphasised: inference, algorithms and computational complexity, real applications (more information available at <http://www.sipta.org/~isipta03/themes.html>).

Location

ISIPTA '03 will be held at the University of Lugano, Switzerland (more information at <http://www.sipta.org/~isipta03/venue.html>).

Important dates

Paper submission deadline: 8 February 2003
Notification of acceptance: 1 April 2003

Deadline for revised papers: 1 May 2003

Tutorial day: 14 July 2003

Symposium: 15-17 July 2003

Submissions

There is a strict limit of 15 pages for papers submitted to the symposium. See <http://www.sipta.org/~sipta03/submit.html> for detailed instructions. Submitting papers is now possible. Follow the instructions in the conference web page.

Program Board

Jean-Marc Bernard (Universit Paris 5, France)
Teddy Seidenfeld (Carnegie Mellon University, USA)

Marco Zaffalon (IDSIA, Switzerland)

Steering Committee

Gert de Cooman (Universiteit Gent, Belgium)

Serafin Moral (Universidad de Granada, Spain)

Questions

If you have any questions about the symposium, please contact the Organising Committee, at the following address:

Marco Zaffalon
IDSIA
Galleria 2
CH-6928 Manno
Switzerland
phone +41 91 610 8665
fax +41 91 610 8661
e-mail zaffalon@idsia.ch

The articles of SIPTA

In the following we report the current articles of SIPTA, as approved by the constituting meeting. The Society was physically established in Switzerland, so the articles refer to the Swiss civil law (<http://www.admin.ch/ch/i/rs/21.html#21>). A reworked version of the articles will appear in the second half of 2003.

Article I - Name and Place

1. This international society is named *Society for Imprecise Probability Theory and Applications* (abbreviated to *SIPTA*, and in this document also called *the Society*) and is established according to articles 60 and following of the Swiss Civil Law, which govern all legal matters and possible controversies.
2. The Society is headquartered at the office of the SIPTA President or Secretary or Treasurer, as determined by SIPTA Executive Committee.

Article II - Purpose and Activities

1. The Society is a not-for-profit organisation uniting private persons dealing with theory and applications of imprecise probabilities and related topics.
2. The Society considers *imprecise probability* to be a generic term for the many mathematical models which measure chance or uncertainty without sharp numerical probabilities. It supports the view that such models are needed in inference problems where the relevant information is scarce, vague or conflicting, and in decision problems where preferences are incomplete.
3. The aims of the Society are to:
 - advance and promote the theory and applications of imprecise probabilities;
 - disseminate and promote the idea that imprecision is an important aspect of probabilistic modelling, and that this imprecision should therefore be taken into account in realistic probabilistic models;
 - promote contacts and exchange information among scientists and practitioners in different fields and from different countries interested in the theory and applications of imprecise probabilities, and coordinate their activities;
4. In order to achieve these aims, the Society:
 - organises a biennial series of international conferences, called *International Symposium on Imprecise Probabilities and Their Applications* (abbreviated to *ISIPTA*);
 - organises meetings, courses and summer schools on topics related to imprecise probabilities;
 - arranges the editing and publication of the ISIPTA proceedings, as well as scientific books in the field of imprecise probabilities;
 - hosts and maintains a website that allows people interested in imprecise probabilities to communicate research and other information relevant to the Society's aims with one another and the broader community.
 - delivers an electronic newsletter to its members;

- encourages its members to act as (Associate) Editors for scientific journals that are interested in publishing papers on the theory and applications of imprecise probabilities.

Article III – Membership

1. The members of the Society are called *Fellows of the Society for Imprecise Probability Theory and Applications* (abbreviated to *SIPTA Fellows*, and in this document also referred to as *Fellows*).
2. Eligible as Fellows are those people who:
 - are committed to promoting the aims of the Society;
 - are recognised by the Fellows as having produced excellent research in the field of imprecise probabilities and their applications;
 - are willing to contribute substantial time and effort to working on specific tasks on behalf of the Society.
3. All Fellows, and only they, have voting rights.
4. Members of the public can become Fellows by invitation of the Society. The Fellows decide on whether membership is granted by a 2/3 majority.
5. Membership can be terminated if the Fellow sends a letter of resignation to the SIPTA President.

Article IV – Honorary Fellows

1. The Society may exceptionally award the title of *Honorary Fellow of the Society for Imprecise Probability Theory and Applications* (abbreviated to *SIPTA Honorary Fellow*, and in this document also referred to as *Honorary Fellow*).
2. This honorary fellowship may be awarded to any member of the public who:
 - has made distinguished and exceptional theoretical or practical contributions to the field of imprecise probabilities; or
 - has shown exceptional commitment to furthering the aims of the Society.
3. Any Fellow can propose a candidate for such an honorary fellowship at any time. It is awarded after a vote among all Fellows, by a 2/3 majority.

4. The title is conferred during the next General Meeting.
5. Honorary Fellows do not have the rights and obligations of Fellows.

Article V – Bodies of the SIPTA

1. The bodies of the Society are
 - the *General Meeting of all Fellows of the Society for Imprecise Probability Theory and Applications*, also called the *General Meeting of the SIPTA*, in this document abbreviated to *General Meeting*;
 - the *SIPTA Executive Committee*.

Article VI – General Meeting of the SIPTA

1. General Meetings are held every second year, during an ISIPTA conference, and at a location near to where the conference is being held.
2. If this proves impossible, the SIPTA Executive Committee organises the General Meeting through the means of an electronic discussion forum accessible to all the Fellows, within one month after the ISIPTA conference.
3. All Fellows are welcome and encouraged to participate in the General Meetings.
 - 3.1. In order to produce a quorum, at least half of the Fellows must participate in the General Meeting.
 - 3.2. Fellows who cannot attend the General Meeting, can designate a proxy in writing to the SIPTA Secretary.
4. The General Meeting:
 - appoints a Financial Committee of three Fellows who are to prepare the annual financial reports of the Society for the two coming years. These reports should be sent to all Fellows, preferably by e-mail. The first report should be sent to the Fellows within three months after the General meeting, and the second one year later.
 - elects the members of the SIPTA Executive Committee from among the Fellows, according to a simple 1/2 majority among all Fellows participating;

- considers and votes for approval of the by-laws suggested by the Fellows, according to a simple 1/2 majority among all Fellows participating.
 - considers and votes for approval changes and additions to the Articles suggested by the Fellows. Changes to the Articles require a 2/3 majority among all Fellows. Also, any proposed changes or additions should be notified to the SIPTA Secretary, who will inform all Fellows about them. This should be done at least one month prior to the General Meeting, so that all Fellows have time to consider the proposed changes carefully.
5. Elections and approvals, as well as other business, may also be handled at all other times through electronic or other mailings co-ordinated by the SIPTA Secretary.
 6. Terms of members of the SIPTA Executive Committee will be two years, beginning on the first day of the month after the election took place.

Article VII – The SIPTA Executive Committee

1. The SIPTA Executive Committee consists of the following members elected by the Fellows, to a maximum of 12 people:
 - the SIPTA President;
 - the SIPTA Secretary;
 - the SIPTA Treasurer;
 - the SIPTA Editors, responsible for various parts of the web site and the SIPTA Newsletter, under the coordination of one Executive Editor.
 - and up to 5 other Fellows.
 2. The SIPTA Secretary and the SIPTA Treasurer may be the same person. The SIPTA President cannot take up any other position in the SIPTA Executive Committee during his term.
 3. The SIPTA Executive Committee runs the daily affairs of the Society. It is responsible for the newsletter and the website.
 4. The SIPTA President and the SIPTA Treasurer handle the daily financial affairs of the Society. They are accountable to the General Meeting, and should provide the Financial Committee with all the information they ask for, related to the financial situation of the Society.
5. The SIPTA Executive Committee decides where the next ISIPTA conference will take place. It appoints the members of the next ISIPTA's Steering Committee.
 6. The SIPTA Executive Committee, as well as other Fellows, may suggest bylaws in order to regulate:
 - governing of the Society;
 - organising the ISIPTA conferences;
 - organising and running meetings;
 - elections;
 - awarding Honorary Fellowships.

Article VIII – The ISIPTA Conferences

1. The ISIPTA conferences take place every second year, before the 1st of September of that year.
2. Shortly after the last ISIPTA conference, the Steering Committee for the next ISIPTA conference is appointed by the newly elected SIPTA Executive Committee.
3. The ISIPTA Steering Committee consists of
 - the Chairman of the Local Organising Committee, who is responsible for the local organisation, the daily affairs and finances of the ISIPTA conference.
 - the Programme Committee Board, consisting of up to three people, responsible for (i) forming a Program Committee, whose members are to review the papers submitted to the conference, (ii) supervising the paper review procedure, (iii) deciding on which papers will be accepted, and (iv) working out the scientific programme of the conference;
 - the Webmaster, responsible for the web site of the conference;
 - a number of members of previous ISIPTA Steering Committees.
4. Any profits derived from the organisation of the ISIPTA conferences shall go to the Society, and are to be used for covering the working costs of the Society.
5. Shortly after the ISIPTA conference, the Chairman of the Local Organising Committee will present a report about its finances to the Executive Committee.

Article IX – Circularising the members

1. The Fellows and Honorary Fellows will receive a SIPTA Newsletter or a similar document for announcements of news about the Society. This newsletter will also be sent to non-members who have expressed an interest in receiving such newsletters.

Article X – Liquidation

1. If liquidation of the assets of the Society is necessary, the SIPTA Executive Committee is the liquidator.
2. Liquidation requires approval by a 2/3 majority of the Fellows.
3. After liquidation the remaining assets of the Society are to be devolved upon a similar not-for-profit organisation.
4. The Fellows are not responsible or accountable for possible debts of the Society.

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THE SOCIETY FOR IMPRECISE PROBABILITY
THEORY AND APPLICATIONS
www.sipta.org
SIPTA c/o IDSIA Galleria 2 CH-6928
Manno Switzerland

President: Gert de Cooman

Secretary: Marco Zaffalon

Treasurer: Jean-Marc Bernard

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Software Section Editor: Lev. V. Utkin

Who's Who Section Editor: Thomas Augustin

Bibliography Editor: Jean-Marc Bernard and Marco Zaffalon

Documentation Section Editor: Thomas Lukasiewicz

Other executive committee members:
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