B-Stat News

The Newsletter
of the

Belgian Statistical Society
Belgische Vereniging voor Statistiek
Société Belge de Statistique

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Website of the Society

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TABLE OF CONTENTS

PRESIDENTIAL ADDRESS

The SBS-BVS – Its past, present and future

Taking over the presidency of the Belgian Statistical Society has always been a challenging mission. It is perhaps more so today in a world that is evolving at an increasingly rapid pace. Recent editorials by Stephen Stigler (*"Does the American Statistical Association have a future?", AMSTAT News, August 2004)* and by Andy Grieve *("Is the RSS future secure?", RSS News, February 2005*) clearly indicate that concern about the mere existence and survival of statistical societies is growing or at least questioned. So what are the prospects for the SBS-BVS? We should remember that the Belgian Statistical Society was founded in 1937 and had traditionally placed strong emphasis on mathematical and official statistics. Thereafter, a long period of hibernation and abandonment followed. By the late eighties, nobody knew who the members were and only a secretary-treasurer was left to make sure that the society's financial assets were kept safe and secure. In the year 1991, the society was revived and reorganized under the impulse of Jef Teugels, Marc Hallin and some others. Since then, the number of members has increased steadily to reach a total of 320 people. But can we content ourselves with this apparently favourable situation? Does the SBS-BVS have a future? Is the SBS-BVS future secure? Our society's history, as recalled above, indicates that the answer is no and that we should be constantly on alert and innovative to avoid a "bis repetita" in the changing environment we're living in.

Currently our statistical society is flourishing. As already mentioned, we have over 300 active members, our statutes are in accordance with the new decree on non-profit organizations, our financial situation is excellent and the B-Stat News journal is published regularly. From a scientific standpoint, the society organizes many conferences, workshops and short courses, and the annual meeting has become over the years not only a highly praised scientific event but also a friendly and enjoyable gathering. The fame and reputation of our statistical institutes and statisticians has grown by leaps and bounds. Our impressive scientific production is acknowledged and most respected by the international statistical community. It is my dear wish that this unprecedented expansion of our statistical society will continue, but the recent editorials of the ASA and RSS should not escape our notice.

I see a series of potential dangers that could hamper our mid-term future evolution.

The membership rate may regress for various reasons (e.g., lack of interest, non-payment of annual dues, and lower involvement of active members at any level of the society). Therefore, it is essential that the SBS-BVS unites all statisticians of our country and that continuous efforts are made to pursue the growth that we have experienced since 1991.

The increasing number of statistical groups, associations and societies (e.g., ENBIS, data mining group, clinical biostatisticians, RSS 3CC local group, Chemometric society), while reflecting the rapid development and wide influence of our profession, can be a problem for it is difficult to be active or belong to all of them. The risk also exists that a sub-section of our own society outgrows the society itself and develops into a new independent entity. We should aim at unity within our society, maintaining a balance between our sub-sections, between academic and industrial statisticians, between theoretical, applied and societal aspects of statistics. So far, this has worked well. Our collaboration with other Belgian societies, like the Quetelet society, or even with foreign societies (Société française de Statistique, Dutch Vereniging voor Statistiek, Royal statistical Society, International Federation of Classification Societies) has been a success in the past and will have to be amplified.

The fierce competition between our statistical institutes, while being a stimulus in a highly competitive world, can endanger our legendary solidarity. As an example, in the French Community of Belgium, as a consequence of the new "Bologna" decree, masters in statistics will be offered in 4-5 universities clustered in a handkerchief territory. The same argument also applies to Flanders. The SBS-BVS should be preoccupied by this undesirable situation and look for complementary and potential ways of stimulating inter-university centres of excellence.

The formidable and overwhelming development of bioinformatics constitutes probably the greatest threat to our profession and society. In my opinion, it is most timely to clarify the position of statisticians in this nebula and to proclaim at large the potential role that statisticians have to play in the uncovering of the human genome. Statistics will not disappear because of the advent of bioinformatics but, in terms of funding and scientific resources, it could badly suffer from it.

While the Internet information society connects us instantly and permanently, day and night, all year round, and all over the world, paradoxically it changes our close, face-to-face human relations into an artificial, distant "modus vivendi". In this context, the SBS-BVS annual meeting remains the undeniable scientific and social event to strengthen our friendship and collaborations. The B-Stat News, although electronically available on the web site, will remain for a while our hardcopy journal link.

I feel quite honoured to preside the SBS-BVS for the next three years (2005-2007) in follow-up of my predecessors Noel Veraverbeke (2002-2004), Léopold Simar (1999-2001), Jan Beirlant (1996-1998), Marc Hallin (1993-1995) and Jef Teugels (1991-1992). I thank these presidents and the former treasurer, Geert Molenberghs, for their achievements and devotion to the society. I count on our new vice-president, Paul Janssen, our treasurer Marc Aerts, our secretary Gentiane Haesbroeck, and on all Board members to face the challenges ahead. Finally, I trust you, members of the SBS-BVS, for your help and support.

Adelin Albert
President of the SBS-BVS

PROCES-VERBAUX DES ASSEMBLEES GENERALES

Assemblée générale du 24 février 2005
à 17h15 au Limburgs Universitair Centrum, Diepenbeek

Présents: M. Aerts, A. Albert, L. Bijnens, U. Einmahl, I. Gijbels, G. Haesbroeck, M. Hallin, P. Janssen, P. Lambert, G. Molenberghs, O. Thas, D. Van den Poel, D. Renard, P. Slock, N. Veraverbeke

Excusés: T. Bruss, P. Dagnelie, F. Desmedt, J. Loris-Teghem, D. Paindaveine, Ch. Ritter.

La séance est ouverte à 17h15.

1. Approbation du procès verbal de l'Assemblée générale du 13 février 2004

Le procès verbal, publié dans le *B-Stat News* N°31 de mai 2004, est approuvé sans modification.

2. Rapport moral et rapport d'activités

Le Président N. Veraverbeke dresse le bilan des activités de l'année 2004, troisième et dernière année de son mandat de Président.

– Le Conseil d'Administration de la Société s'est réuni à deux reprises durant l'année 2004, respectivement les 15 mai et 8 décembre 2004, chaque fois à l'Institut National de Statistique (INS), Bruxelles. N. Veraverbeke profite de l'occasion pour remercier au nom de tous les membres du Conseil d'Administration l'INS pour son hospitalité. De plus, deux Assemblées Générales Extraordinaires de la Société ont été organisées afin d'adapter les statuts en fonction de la nouvelle loi sur les ASBL. Ces réunions se sont déroulées les 6 et 22 décembre 2004. Les procès verbaux de ces assemblées ainsi que les nouveaux statuts ont été publiés dans le *B-Stat News* de janvier 2005.

– Comme prévu, trois numéros de *B-Stat News* ont été publiés en 2004 (n° 30, 31, 32). Le Président remercie au nom de la Société les deux éditeurs, M. Hubert (KULeuven) et Ph. Lambert (UCL) pour leur excellent travail.

– L'effectif de la Société se monte à plus de 300 membres actifs, 278 d'entre eux ayant payé la cotisation pour 2004. En 2004, 25 nouveaux membres ont été admis auxquels il faut ajouter 4 membres proposés à l'Assemblée Générale, soit au total 29 personnes. Le Président rappelle que la Société ne compte plus que l'INS comme membre institutionnel.

– Le site web de la société est toujours efficacement maintenu par A. Albert et L. Seidel. Le Président les remercie pour le travail que cela représente.

– La 12ème réunion annuelle de la SBS-BVS s'est tenue à Vielsalm (8-9 octobre 2004). Les statistiques de ce congrès sont les suivantes : 96 participants, 6 conférenciers invités, 20 autres contributions orales et 9 posters. Un compte rendu a été publié dans le *B-Stat News* de janvier 2005. Le Président remercie l'équipe de l'ULg pour l'organisation de cette manifestation. La prochaine réunion, organisée par UGent, aura lieu les 14 et 15 octobre 2004 au domaine Priorij Corsendonk à Oud-Turnhout. Pour la première fois, le Conseil d'Administration a demandé au comité organisateur d'inviter d'autres Sociétés scientifiques à participer à ces deux journées. Plus de détails seront donnés par le porte-parole du comité organisateur, O. Thas, au point 8. Finalement, le Président annonce que l'organisation du congrès de 2006 devrait être confiée à la FUNDP.

– Concernant les activités sponsorisées par la SBS-BVS en 2004, la Société a subsidié un symposium sur le Data Mining organisé le 10 mai 2004 par le Center for Statistics de UG ainsi qu'un colloque sur le thème 'Risk Analysis: Statistical and Probabilistic Methods' de la KULeuven (26 et 27 mai 2004). Pour l'année 2005, le Conseil d'Administration a déjà octroyé un sponsor à UG pour l'organisation le 17 mai 2005 d'un symposium intitulé "Statistical genetics".

– Enfin, le Président signale que la candidature de la Société Belge de Statistique en tant que membre de niveau 1 de la Société Européenne de Mathématique (EMS) a été acceptée par l'Assemblée Générale de l'EMS en juillet 2004. Un lien vers cette société a été ajouté sur le site de la SBS.

2bis. Rapport moral et rapport d'activités de la section biostatistique

Ph. Lambert présente les activités de la Section "Biostatistique" de la Société. Certaines parties de ce rapport ont été déjà reprises dans le procès-verbal de l'Assemblée Générale de la Section organisée le 27 mai 2004 (procès-verbal publié dans *B-Stat News 32* de septembre 2004).

− Activités organisées, co-organisées ou soutenues par la Section
  - B. Boulanger (Eli Lilly) a organisé les 22 et 23 avril 2004 le 'DIA non-clinical statistical meeting' à Dublin.
  - P. Eilers (Leiden University Medical Center) a été invité à donner le cours intitulé "An introductory course in statistics for genomic data" à Louvain-la-Neuve (Eli Lilly Development Center) les 26 et 27 mai 2004. Dix-sept personnes ont participé à ce cours.
  - La Section Biostatistique a organisé en collaboration avec 3CC et la Société Quetelet une journée scientifique à Janssen Pharmaceutica (Beerse) le 22 juin 2004.
  - Une session a été organisée lors de la réunion annuelle de la SBS-BVS à Vielsalm en octobre 2004. Cinq contributions ont été sélectionnées parmi les sept soumissions.

− Activités relatives à la EFSPI (European Federation of Statisticians in the Pharmaceutical Industry):
  - La Section est représentée à la EFSPI par deux membres (C. Dubois et B. Boulanger).
  - La Section a ainsi participé au congrès de la EFSPI à Dublin en avril.
  - A la demande de la EFSPI, C. Dubois a recueilli puis transmis les commentaires des membres de la Section Biostatistique concernant le document ICH E14.
  - C. Dubois a aussi la responsabilité de rassembler et transmettre toute information sur des événements se déroulant en Belgique et pouvant être intéressants pour les membres de la EFSPI.

- Elections (effectuées lors de l'Assemblée Générale du 27 mai 2004, voir *B-Stat News* 32 pour les détails)
  - L. Danielson (UCB) et D. Rosillon (SGS Biopharma) sont arrivés au terme de leur mandat de présidente et de secrétaire. La Section Biostatistique les remercie chaleureusement pour leur travail efficace de ces trois dernières années.
  - Deux candidats se sont présentés, à savoir J. Bogaerts (EORTC) et C. Dubois (UCB). Les 51 votes valides reçus ont donné les résultats suivants : 32 votes pour J. Bogaerts et 45 votes pour C. Dubois. C. Dubois ayant obtenu le plus de votes sera la prochaine Présidente dans deux ans. Le nouveau comité est maintenant constitué des membres suivants: Ph. Lambert (Président), B. Boulanger (Trésorier et secrétaire), C. Dubois et J. Bogaerts.

- Activités prévues
  - Organisation d'un cours intitulé "Introduction to Bayesian Inference in Biomedical Studies" par le Professeur N. Best (Imperial College, Londres) du 2 au 4 mai 2005.
  - Organisation d'un colloque d'un jour sur le même thème en novembre 2005. Plus de détails seront communiqués bientôt mais G. Roberts (Lancaster, UK) a déjà accepté d'être un des orateurs.

- Rapport financier: en janvier 2005, la situation financière de la section Biostatistique s'élevait à 3148,55 €.

Le vote est fait sur ces rapports et l'Assemblée Générale donne décharge au Président et au Conseil sur ce point.

3. Rapport financier

Tout d'abord, le bilan financier de la réunion annuelle d'octobre 2004 est présenté. Il se solde par un bénéfice de 1248, 33 €. Ensuite, les comptes de l'année 2004 sont détaillés par le trésorier G. Molenberghs. Ceux-ci se finalisent par un bénéfice assez important de 7543,96 €.

Vu l'état actuel des comptes qui, au 31/12/2004, s'élèvent à 66133,93 €, on peut conclure que la SBS-BVS se trouve dans une situation financière très confortable.

Le vote est fait sur ce rapport. Ces comptes sont approuvés à l'unanimité.

4. Rapport du Secrétaire

En 2004, 278 membres sur 320 ont payé leur cotisation. Parmi les personnes n'étant pas en règle de cotisation en 2004, 8 n'ont pas payé depuis au moins deux années. Conformément aux statuts de la Société, l'Assemblée Générale procède à leur radiation.

Comme indiqué dans le rapport moral du Président, les statuts de la Société ont été revus afin d'être compatibles avec la loi du 2 mai 2002 régissant les règles applicables aux ASBL. Les nouveaux statuts ont été publiés dans le *B-Stat News* et seront prochainement publiés (en français et en néerlandais) dans le Moniteur Belge.

5. Admission de nouveaux membres

Au cours de l'année 2004, 25 membres ont été admis par le Conseil. Il s'agit de:

Guy BAELE (UG), Laurence NOIROUX (S-Clinica), Michiel DEBRUYNE (KUL), Sylvie GOETGELUK (UG), Koen KNAPEN (SAS Institute), Maria Caterina BRAMATI (ULB), Delphine CASSART (ULB), Edward OMEY (EHSAL), Caroline RENERS (AARDEX), Jan SERROYEN (LUC), Catherine VERMANDELE (ULB), Saskia LITIERE (LUC), Marius STEFAN (ULB), Abdelilah YADINE (ULB), Nezar BENNALA (ULB), ADANS Séverine (FUNDP), BONTEMPI Gianluca (ULB), BRAAT Sabine (NV Organon), CLEMENT Lieven (UGent), DESCHEPPER Ellen (UGent), DESMECHT Laurent (FUNDP), ROLAND François (FUNDP), THAS Olivier (UGent), VEREDAS David (ULB), WOUTERS Heidi (UGent)

Il faut de plus ajouter 4 nouveaux membres admis lors de la présente Assemblée Générale, à savoir

Cécile FAUCONNIER (ULg), Catherine LEGRAND (EORTC), Giovanni MOTTA (UCL), Jan SMIT (Cosinus Computing).

L'Assemblée générale ratifie ces nouvelles admissions.

6. Admission de nouveaux membres institutionnels

Il n'y a pas eu d'admission de nouveaux membres institutionnels en 2004.

7. Etat du *B-Stat News*

Les tables des matières des *B-Stat News* publiés en 2004 sont rapidement évoquées par Ph. Lambert qui rappelle aussi que la revue est disponible en ligne sur le site de la SBS-BVS dès qu'elle est prête. La copie papier est cependant toujours envoyée à tous les membres dès que l'impression est achevée. Certains membres ont fait savoir qu'ils ne désiraient plus recevoir la copie papier, étant tout à fait satisfaits avec la version en ligne. Il est suggéré de demander à tous les membres de prévenir le secrétariat s'ils ne désirent plus recevoir la version imprimée du *B-Stat News*.

8. Préparation de la réunion annuelle 2005

O. Thas donne un bref compte-rendu de l'état d'avancement de l'organisation de la prochaine réunion annuelle la SBS-BVS. Celle-ci aura lieu, comme déjà rappelé ci-dessus, les 14 et 15 octobre 2005 au Priorij van Corsendonk à Oud-Turnhout. Le thème du congrès est "*Model selection*".

Le comité organisateur est composé de D. Van den Poel, E. Goetghebeur, L. Duchateau, O. Thas, S. Van Aelst et S. Vansteelandt tandis que le comité scientifique est constitué de D. Van den Poel, G. Pison, L. Bijnens (Janssen Pharmaceutica), M. Vandenbroek (KULeuven), P. Lambert (UCL), S. Van Aelst, S. Vansteelandt et O. Thas (porte-parole).

A la demande du Conseil d'Administration de la SBS-BVS, le comité organisateur a pris contact avec d'autres sociétés scientifiques actives en Belgique pour leur proposer de participer à l'organisation de cette manifestation scientifique. Des collaborations sont donc envisagées avec les Sociétés RSS-3CC, Quetelet et bENBIS. Il est d'ailleurs prévu de consacrer une des deux sessions parallèles du vendredi après-midi à bENBIS.

Quant au programme scientifique, les orateurs invités suivants sont confirmés : G. Claeskens (KULeuven), N. Henze (Karlruhe) et S. Le Cessie (Leiden). D'autres orateurs doivent toujours confirmer leur participation.

Le comité organisateur a déjà obtenu un certain nombre de sponsors et prépare le site web du congrès qui devrait être accessible rapidement. L'appel aux abstracts sera vraisemblablement lancé vers la mi-avril et les inscriptions seront ouvertes en même temps.

9. Etat sur le sponsoring de la SBS-BVS

La SBS-BVS apporte son support (financier ou non) à l'organisation de conférences, ateliers, cours ou séminaires, afin de stimuler et de soutenir la statistique dans le pays. Elle souhaite ainsi offrir à ses membres des réductions de droit d'inscription à ces rencontres scientifiques. Dans son rapport, le Président a déjà mentionné les octrois offerts en 2004, ainsi que ceux réalisés jusqu'à présent pour l'année 2005.

10. Cotisation annuelle pour l'an 2006

Pour l'année 2006, l'Assemblée Générale propose de ne pas modifier le montant des cotisations annuelles, à savoir :

- Membre ordinaire: 40 €
- Etudiant et membre retraité: 20 €.

De plus, les membres qui s'inscrivent conjointement à la SBS-BVS et à la Société Quetelet bénéficient d'une réduction de 15 €.

Pour les membres institutionnels, la cotisation annuelle minimale est fixée à 625 €.

11. Renouvellement et élection de huit membres du conseil d'Administration

Pour rappel, les mandats suivants arrivaient à échéance le 31 décembre 2004 au Conseil d'Administration de la SBS-BVS: A. Albert (ULg), J.J. Claustriaux (FSAGx), P. Couvreur (UMH), G. Haesbroeck (ULg), M. Hallin (ULB), G. Molenberghs (LUC), D. Van Den Poel (UG) and N. Veraverbeke (LUC). Dix candidats se sont présentés pour les 8 postes vacants. Comme les statuts de la Société prévoient un équilibre entre les représentants francophones et néerlandophones, il est décidé que 6 des 7 candidats francophones et 2 des 3 candidats néerlandophones seront sélectionnés, la sélection étant basée sur le nombre de voix obtenu.

Au total, 103 bulletins de vote valides ont été reçus au secrétariat de la Société. Le dépouillement des bulletins lors de l'Assemblée Générale a donné les résultats suivants:

- M. Aerts (LUC) 55 voix
- A. Albert (ULg) 70 voix
- G. Haesbroeck (ULg) 78 voix
- M. Hallin (ULB) 54 voix
- P. Janssen (LUC) 65 voix
- P. Lambert (UCL) 69 voix
- J.P. Rasson (FUNDP) 36 voix
- Ch. Ritter (Monnet Centre Int. Lab, UCL) 51 voix
- D. Van den Poel (UGent) 42 voix
- C. Vermandele (ULB) 33 voix

A obtenu 1 voix: N. Veraverbeke (LUC).

En conséquence, les 7 membres francophones ayant obtenu le plus grand nombre de voix sont A. Albert, G. Haesbroeck, M. Hallin, P. Lambert, J.P. Rasson et Ch. Ritter. Parmi les représentants néerlandophones, il s'agit de M. Aerts et P. Janssen. Ces huit membres sont donc élus membres du Conseil d'Administration de la SBS-BVS pour la période 2005-2007.

Conformément aux statuts de la Société, le conseil d'Administration s'est retiré quelques instants afin de procéder à l'élection du Président, du Vice-Président, du Secrétaire et du Trésorier. Les nominations obtenues sont les suivantes :

Président: A. Albert
Vice-Président: P. Janssen
Secrétaire: G. Haesbroeck
Trésorier: M. Aerts

12. Nomination de J. Teugels au titre de 'membre d'honneur' de la Société

Le Président, au nom du Conseil d'Administration, reprend la parole et propose à l'Assemblée générale la nomination de J. Teugels en qualité de *"membre d'honneur"* de la Société. C'est à l'unanimité des membres présents que la proposition est acceptée. Le Président fait ensuite l'éloge de J. Teugels, éloge qui sera publié dans le prochain *B-Stat News*.

13. Activités futures de la Société

Le Président invite les membres à consulter le site web de la Société puisque les activités futures de la Société ainsi que les prochains événements 'statistiques' en Belgique y sont mentionnés.

14. Divers

Aucun point divers n'est abordé.

Le Président remercie l'Assemblée Générale et clôt la séance à 19 h.

Pr. G. Haesbroeck   Pr. N. Veraverbeke
Secrétaire   Président

VERSLAGEN VAN DE ALGEMENE VERGADERINGEN

Algemene Vergadering van 24 februari 2005
om 17u15 in het Limburgs Universitair Centrum, Diepenbeek

Aanwezigen: M. Aerts, A. Albert, L. Bijnens, U. Einmahl, I. Gijbels, G. Haesbroeck, M. Hallin, P. Janssen, P. Lambert, G. Molenberghs, O. Thas, D. Van den Poel, D. Renard, P. Slock, N. Veraverbeke

Verontschuldigd: T. Bruss, P. Dagnelie, F. Desmedt, J. Loris-Teghem, D. Paindaveine, Ch. Ritter.

De vergadering wordt geopend om 17h15.

1. **Goedkeuring van het verslag van de Algemene Vergadering van 13 februari 2004**

Het verslag dat gepubliceerd werd in *B-Stat News* N°31 van mei 2004 wordt ongewijzigd goedgekeurd.

2. **Verslag van de Voorzitter en activiteitenverslag**

De voorzitter N. Veraverbeke maakt de balans op van de activiteiten van het jaar 2004, het derde en laatste jaar van zijn mandaat als voorzitter.

−   De Raad van Bestuur van de Vereniging kwam tweemaal samen in het jaar 2004, respectievelijk op 15 mei en op 8 december, in het NIS te Brussel. N. Veraverbeke maakt van de gelegenheid gebruik om – in naam van de leden van de Raad van Bestuur – het NIS te bedanken voor de geboden gastvrijheid. Bovendien hebben er op 6 en 22 december 2004 twee buitengewone algemene vergaderingen van de Vereniging plaatsgevonden om de statuten van de Vereniging aan te passen aan de nieuwe wetgeving omtrent VZW's.   De verslagen van deze vergaderingen en de nieuwe statuten zijn gepubliceerd in *B-Stat News* van januari 2005.

−   Volgens plan verschenen drie nummers van *B-Stat News* in 2004 (N° 30, 31, 32). De Voorzitter dankt in naam van de Vereniging de twee redacteuren, M. Hubert (KULeuven) en Ph. Lambert (UCL) voor hun uitstekend werk.

–   Het aantal leden van de Vereniging bedraagt meer dan 300, waarvan 278 het lidgeld voor 2004 betaald hebben. In 2004 zijn 25 nieuwe leden toegelaten, daarbij moeten nog de 4 nieuwe leden gevoegd worden die tijdens de algemene vergadering zijn toegelaten; dit betekent 29 nieuwe leden in 2004. De Voorzitter vermeldt verder dat de Vereniging enkel nog het NIS als institutioneel lid heeft.

–   De webstek van de Vereniging werd met zorg onderhouden door A. Albert et L. Seidel. De Voorzitter dankt hen voor het geleverde werk.

–   De twaalfde jaarlijkse bijeenkomst van de BVS/SBS ging door in Vielsalm (8-9 oktober 2004). De statistieken van het congres zijn als volgt : 96 deelnemers, 6 uitgenodigde sprekers, 20 mondelinge korte mededelingen en 9 posters. Een kort verslag is verschenen in *B-Stat News* N° 33 van januari 2005. De Voorzitter dank de ploeg van de Universiteit van Luik die deze bijeenkomst organiseerde. De volgende bijeenkomst zal georganiseerd worden door de Universiteit van Gent en zal doorgaan op 14 en 15 oktober in de Priorij van Corsendonk (Oud-Turnhout). Voor de eerste keer vraagt de Raad van Bestuur aan het organiserend comité om andere wetenschappelijke verenigingen uit te nodigen om deel te nemen aan deze tweedaagse bijeenkomst. Meer details worden gegeven in Sectie 8 van dit verslag waarin O. Thas (als lid van het organiserend comité) meer details geeft. Tenslotte deelt de Voorzitter mee dat de organisatie van het congres van 2006 toevertrouwd is aan de FUNDP (Namen).

–   Wat betreft de sponsoring van activiteiten in 2004 door de BVS/SBS, heeft de Vereniging steun verleend aan een symposium over 'Data Mining' dat op 10 mei 2004 georganiseerd werd door het Centrum voor Statistiek van de UGent en aan een colloquium met als thema 'Risk Analysis: Statistical and Probabilistic Methods' dat op 26 en 27 mei 2004 georganiseerd werd door de KULeuven. Voor 2005 heeft de Raad van Bestuur al sponsoring toegezegd aan de UGent voor de organisatie – op 17 mei 2005 – van een symposium over 'Statistical Genetics'.

–   Tenslotte deelt de Voorzitter mee dat de kandidatuur van de Belgische Vereniging voor Statistiek in hoedanigheid van lid van niveau 1 van de Europese Vereniging voor Wiskunde (EMS) aanvaard is door de Raad van Bestuur van de EMS in juli 2004. Een link naar de webstek van de EMS kan worden terugvonden op de webstek van de BVS/SBS.

2bis. Verslag van de voorzitter en activiteitenverslag van de sectie Biostatistiek

Ph. Lambert stelt de activiteiten voor van de sectie 'Biostatistiek' van de Vereniging. Sommige gedeelten van zijn rapport zijn reeds aan bod gekomen in het verslag van de algemene vergadering van 27 mei 2004 (gepubliceerd in *B-Stat News* N° 32 van september 2004).

− De Sectie organiseerde, co-organiseerde of steunde de volgende activiteiten:
  • B. Boulanger (Eli Lilly) organiseerde op 22 en 23 april 2004 de 'DIA non-clinical statistical meeting' te Dublin.
  • P. Eilers (Leiden University Medical Center) gaf op uitnodiging de cursus 'An introductory course in statistics for genomic data' in Louvain-la-Neuve (Eli Lilly Development Center). De cursus ging door op 26 en 27 mei 2004 en werd gevolgd door 17 deelnemers.
  • De sectie 'Biostatistiek' heeft in samenwerking met de 3CC en de Quetelet Vereniging een wetenschappelijke dag georganiseerd bij Janssen Pharmaceutica (Beerse) op 22 juni 2004.
  • Tijdens de jaarlijkse bijeenkomst van de BVS/SBS in Vielsalm (oktober 2004) organiseerde de sectie 'Biostatistiek' een sessie. Daar werden vijf korte mondelinge mededelingen gepresenteerd die gekozen waren uit zeven inzendingen.

− Activiteiten in het kader van de EFSPI (European Federation of Statisticians in the Pharmaceutical Industry):
  • De Sectie is binnen de EFSPI vertegenwoordigd door twee leden (C. Dubois et B. Boulanger).
  • De Sectie heeft in april ook deelgenomen aan het congres van de EFSPI in Dublin.
  • Op vraag van de EFSPI heeft C. Dubois de commentaren van de leden van de sectie 'Biostatistiek' verzameld omtrent het document ICH E14 en deze vervolgens overgemaakt.
  • C. Dubois heeft ook als taak om informatie te verzamelen en door te spelen omtrent evenementen die in België doorgaan en die interessant kunnen zijn voor de leden van de EFSPI.

− Verkiezingen (gehouden tijdens de Algemene Vergadering van 27 mei 2004, zie *B-Stat News* N° 32 voor verdere details)
  • L. Danielson (UCB) en D. Rosillon (SGS Biopharma) zijn aan het einde van hun mandaat gekomen van voorzitter en secretaris. De sectie 'Biostatistiek' dankt hen van harte voor hun doeltreffende inzet tijdens de drie voorbije jaren.

- Twee personen hebben zich kandidaat gesteld, te weten J. Bogaerts (EORTC) en C. Dubois (UCB). Er zijn 51 geldige stemmen uitgebracht met het volgende resultaat: 32 stemmen voor J. Bogaerts et 45 stemmen voor C. Dubois. C. Dubois die het meeste stemmen behaald heeft zal binnen twee jaar aantreden als de volgende voorzitter. Het nieuwe comité is nu als volgt samengesteld: Ph. Lambert (voorzitter), B. Boulanger (penningmeester en secretaris), C. Dubois et J. Bogaerts.

− Geplande activiteiten
  - De organisatie van een cursus 'Introduction to Bayesian Inference in Biomedical Studies' door Prof. N. Best (Imperial College, Londen) van 2 tot 4 mei 2005.
  - Organisatie van een colloquium (één dag) over hetzelfde thema in november 2005. De verdere details zullen weldra worden meegedeeld, maar G. Roberts (Lancaster, UK) heeft reeds toegezegd als één van de sprekers.

− Financieel rapport : in januari 2005 bedroeg het saldo van de sectie 'Biostatistiek' 3148,55 €.

Deze rapporten worden goedgekeurd door de Algemene Vergadering en decharge wordt verleend aan de voorzitter van de sectie en aan de Raad van Bestuur.

3. Financieel verslag

Vooreerst wordt de financiële balans van de jaarlijkse bijeenkomst in oktober 2004 voorgesteld. Er is een batig saldo van 1248, 33 €. Vervolgens worden door de penningmeester G. Molenberghs de details gegeven omtrent de rekeningen van 2004.
Het saldo van de Vereniging bedraagt 7543,96 €.

Gezien de huidige toestand van de rekeningen die, op 31 december 2004, een positief saldo vertonen van 66133,93 €, kan men besluiten dat de BVS/SBS zich in een gezonde financiële situatie bevindt.

Het verslag wordt bij stemming unaniem goedgekeurd door de Algemene Vergadering.

4. Verslag van de secretaris

In 2004 hebben 278 van de 320 leden hun lidgeld betaald. Acht personen hebben de voorbije twee jaar hun lidgeld niet betaald. De statuten van de Vereniging voorziet uitsluiting door de Algemene Vergadering van deze personen. De procedure van uitsluiting wordt ingezet.

Zoals aangegeven in het verslag van de Voorzitter zijn de statuten van de Vereniging aangepast aan de wet van 2 mei 2002 omtrent de nieuwe reglementen voor VZW's. De nieuwe statuten zijn gepubliceerd in *B-Stat News* N° 33 en zullen gepubliceerd worden (in het frans en in het nederlands) in het Belgisch Staatsblad.

5. Toelating van nieuwe leden

In het jaar 2004 zijn 25 nieuwe leden toegelaten door de Raad, met name:

Guy BAELE (UGent), Laurence NOIROUX (S-Clinica), Michiel DEBRUYNE (KUL), Sylvie GOETGELUK (UGent), Koen KNAPEN (SAS Institute), Maria Caterina BRAMATI (ULB), Delphine CASSART (ULB), Edward OMEY (EHSAL), Caroline RENERS (AARDEX), Jan SERROYEN (LUC), Catherine VERMANDELE (ULB), Saskia LITIERE (LUC), Marius STEFAN (ULB), Abdelilah YADINE (ULB), Nezar BENNALA (ULB), ADANS Séverine (FUNDP), BONTEMPI Gianluca (ULB), BRAAT Sabine (NV Organon), CLEMENT Lieven (UGent), DESCHEPPER Ellen (UGent), DESMECHT Laurent (FUNDP), ROLAND François (FUNDP), THAS Olivier (UGent), VEREDAS David (ULB), WOUTERS Heidi (UGent)

Bovendien moeten 4 nieuwe leden toegevoegd die toegelaten worden tijdens de huidige Algemene Vergadering, met name :

Cécile FAUCONNIER (ULg), Catherine LEGRAND (EORTC), Giovanni MOTTA (UCL), Jan SMIT (Cosinus Computing).

De Algemene Vergadering keurt de lijst van nieuwe leden goed.

6. Toelating van nieuwe institutionele leden

Er zijn geen nieuwe institutionele leden in 2004.

7. Toestand van *B-Stat News*

De inhoudstafels van de nummers van *B-Stat News* gepubliceerd in 2004 worden voorgesteld door Ph. Lambert. Hij signaleert dat het tijdschrift ook on-line beschikbaar is op de webstek van BVS/SBS. De papieren kopie wordt nog steeds naar alle leden gestuurd. Een aantal leden hebben laten weten dat zij de papieren kopie niet meer wensen te ontvangen omdat ze tevreden zijn met de on-line versie. Er wordt voorgesteld om aan alle leden te vragen het secretariaat te verwittigen indien zij de papieren kopie niet meer wensen te ontvangen.

8. Voorbereiding van de jaarlijkse bijeenkomst 2005

O. Thas geeft een korte stand van zaken en schetst de vorderingen in verband met de organisatie van de volgende jaarlijkse bijeenkomst van de BVS/SBS. Deze zal plaats hebben op 14 en 15 oktober 2005 in de Priorij van Corsendonk in Oud-Turnhout. Het thema van het congres is '*Model Selection*'.

De leden van het organiserend comité zijn D. Van den Poel, E. Goetghebeur, L. Duchateau, O. Thas, S. Van Aelst en S. Vansteelandt, het wetenschappelijk comité is samengesteld uit D. Van den Poel, G. Pison, L. Bijnens (Janssen Pharmaceutica), M. Vandenbroek (KULeuven), P. Lambert (UCL), S. Van Aelst, S. Vansteelandt et O. Thas (woorvoerder).

Op vraag van Raad van Bestuur van de BVS/SBS, heeft het organiserend comité contact genomen met andere wetenschappelijke verenigingen in België met het voorstel om deel te nemen aan de organisatie van deze wetenschappelijke bijeenkomst. Als gevolg wordt samenwerking voorzien met de volgende verenigingen: RSS-3CC, Quetelet en bENBIS.
Er wordt verder voorzien dat één van de twee parallelle sessies op vrijdag ingevuld zal worden door bENBIS.

Wat betreft het wetenschappelijk programma hebben de volgende uitgenodigde sprekers reeds toegezegd: G. Claeskens (KULeuven), N. Henze (Karlruhe) en S. Le Cessie (Leiden). Andere uitgenodigde sprekers moeten nog confirmeren.

Het organiserend comité heeft reeds toezegging gekregen van een aantal sponsoren. Het comité maakt ook een webstek klaar die eerlang toegankelijk zal zijn. De oproep voor abstracts zal eerlang gelanceerd worden (midden april) vanaf dat moment zal het ook mogelijk zijn om in te schrijven.

9. Sponsoring van BVS/SBS

De BVS/SBS verleent haar steun (financieel of niet) aan de organisatie van conferenties, workshops, cursussen en seminaries, teneinde de statistiek in het land te stimuleren en te ondersteunen. Aldus wenst de BVS/SBS aan haar leden een korting te verlenen op de inschrijvingsgelden voor deze wetenschappelijke bijeenkomsten. In zijn verslag heeft de Voorzitter reeds de sponsoring vermeld voor 2005.

10. Jaarlijks lidgeld voor 2006

Voor het jaar 2006 stelt de Algemene Vergadering voor het lidgeld niet te veranderen en vast te leggen op
- Gewoon lid: 40 €
- Studenten en gepensioneerden: 20 €.

Bovendien genieten de leden die tegelijk lid worden van BVS/SBS en de Quetelet Vereniging een korting van 15 €.

Voor de institutionele leden is de jaarlijkse minimale bijdrage 625 €.

11. Vervanging en verkiezing van acht leden van de Raad van Bestuur

Ter herinnering: volgende mandaten in de Raad van Bestuur van de BVS/SBS lopen af op 31 december 2004: A. Albert (ULg), J.J. Claustriaux (FSAGx), P. Couvreur (UMH), G. Haesbroeck (ULg), M. Hallin (ULB), G. Molenberghs (LUC), D. Van Den Poel (UGent) en N. Veraverbeke (LUC).
Tien kandidaten hebben zich aangemeld voor de acht vacante plaatsen. De statuten van de Vereniging voorzien een evenwicht tussen franstalige en nederlandstalige leden. Daarom wordt beslist dat 6 van de 7 franstalige kandidaten en 2 van de 3 nederlandstalige kandidaten zullen gekozen worden. De selectie zal worden bepaald door het aantal behaalde stemmen.

In het totaal zijn 103 geldige stemformulieren ontvangen op het secretariaat van de Vereniging. De telling tijdens de Algemene Vergadering leverde volgend resultaat:

- M. Aerts (LUC)   55 stemmen
- A. Albert (ULg)   70 stemmen
- G. Haesbroeck (ULg)   78 stemmen
- M. Hallin (ULB)   54 stemmen
- P. Janssen (LUC)   65 stemmen
- P. Lambert (UCL)   69 stemmen
- J.P. Rasson (FUNDP)   36 stemmen
- Ch. Ritter (Monnet Centre Int. Lab, UCL)   51 stemmen
- D. Van den Poel (UGent)   42 stemmen

-   C. Vermandele (ULB)   33 stemmen

Behaalde één stem : N. Veraverbeke (LUC).

Als gevolg van deze stemming behaalden de volgende 6 frantalige
kandidaten de meeste stemmen: A. Albert, G. Haesbroeck, M. Hallin, P.
Lambert, J.P. Rasson en Ch. Ritter. De twee nederlandstalige kandidaten met
de meeste stemmen zijn M. Aerts en P. Janssen.
Deze acht kandidaten zijn dus gekozen als leden van de Raad van Bestuur
van de BVS/SBS voor de periode 2005-2007.

Overeenkomstig de statuten van de Vereniging, trekt de Raad van Bestuur
zich enige ogenblikken terug voor de verkiezing van Voorzitter,
Ondervoorzitter en Penningmeester. De resultaten zijn de volgende :

Voorzitter : A. Albert
Ondervoorzitter : P. Janssen
Penningmeester : M. Aerts

12. Nominatie van J. Teugels als 'erelid' van de Vereniging

De Voorzitter, in naam van de Raad van Bestuur, stelt aan de Algemene
Vergadering de nominatie van J. Teugels voor als 'erelid' van de
Vereniging. Het voorstel wordt unaniem aanvaard door de aanwezige leden.
De Voorzitter spreekt een oratio uit voor J. Teugels, deze lofrede zal
gepubliceerd worden in het volgende nummer van *B-Stat News*.

13. Toekomstige activiteiten van de Vereniging

De Voorzitter nodigt de leden uit om de webstek van de Vereniging te
raadplegen omdat informatie over de toekomstige activiteiten van de
Vereniging alsook over een aantal andere statistische evenementen in België
daar te vinden zijn.

14. Varia

Geen variapunten.

De Voorzitter dankt de Algemene Vergadering en sluit de zitting om 19 uur.

Prof. G. Haesbroeck   Prof. N. Veraverbeke
Secretaris   Voorzitter

HONORARY MEMBERSHIP FOR JEF TEUGELS

Laudatio by Noël Veraverbeke

Société Belge de Statistique/Belgische Vereniging voor Statistiek

24 February 2005

Dear Professor Teugels,
Dear Jef,

It is with great pleasure that I, as outgoing president, receive the honour to address you on behalf of the Society. At our board meeting in December we unanimously decided to confer upon you the title of honorary member of the Belgian Statistical Society. We had no problem in finding motivation for this decision.

First of all, there is your successful career of 35 years in probability and statistics as a professor at the K.U.Leuven.
Secondly there is your dedication to the profession and your fundamental role in professional societies, international ones like the Bernoulli Society and the International Statistical Institute, but also national ones like our own Belgian Statistical Society SBS/BVS.

Let me briefly expand a little bit on each of these themes and highlight a few elements from your curriculum vitae.
You were born in Londerzeel in 1939 and after mathematics studies at the K.U.Leuven you went to the USA to obtain a PhD in 1967 at Purdue University, written under supervision of Marcel Neuts, who is also honorary member of our Society. You returned to the K.U.Leuven, became full professor in 1973 and staid at K.U.Leuven until your retirement in 2004. "Staying at the K.U.Leuven" should not be taken too literally. You travelled quite a lot (and you still do), you had visiting positions for research and teaching at many places, all over the globe.

You co-authored several books and more than 100 papers on many topics in probability theory, statistics and stochastic processes. More in particular, you wrote influential papers on regular variation, insurance, risk theory, renewal theory, extreme value theory, etc. Many of these papers are written jointly with some of the 25 students you supervised in these 35 years. Among the books you wrote, I want to mention the one on 'Regular Variation' (1987) (with N.H. Bingham and C.M. Goldie). This book is really the standard reference for all research on this topic worldwide. Of course I should also mention that you co-edited the 'Encyclopedia of

Actuarial Science', published by Wiley in 2004. We also know you as editorial board member of several leading journals and book series and also as a talented organizer of many scientific meetings.

But, as already said, you are not only known for your scientific work but equally well as influential person in several national and international professional organizations. You have been very active in the Bernoulli Society for Mathematical Statistics and Probability and you were President in 1995-1997. You were also Vice-President of the International Statistical Institute (2001-2003).

But of course, important for us, is also that it was you who took the initiative in 1991, together with a small group of Belgian Statisticians, to breathe new life into the sleeping Belgian Statistical Society. You became the first President of the reborn society which is now flourishing with about 300 members.

I hope that I made clear by now that you fully deserve becoming honorary member of the Belgian Statistical Society. Congratulations from all of us.

Noël Veraverbeke

13TH ANNUAL MEETING OF THE BSS

October 14-15, 2005, Oud-Turnhout

The 13th annual meeting of the Belgian Statistical Society (BSS) will this year be organised by Ghent University (Belgium), and will be held on October 14-15 2005 at the Priorij Corsendonk in Oud-Turnhout. This year the meeting is jointly organised with three other statistical societies: b-ENBIS, RSS-3cc and the Quetelet Society.

More information and instructions on how to register and submit abstracts can be found at
www.bss2005.be

Early registration and abstract submission are now open!

Invited speakers include: Gerda Claeskens, Jeroen de Mast, Peter Diggle, David Draper, Paul Eilers, Norbert Henze, Saskia Le Cessie, Elvezio Ronchetti and Andreas Wienke.

The major deadlines are:

* 1 May: Start of reduced fee registration and abstract submission
* 1 July: Closing of abstract submission
* 15 July: Notification of paper (poster) acceptance by the scientific committee.
* 31 August: closing of reduced fee registration

MEMBER NEWS

Sébastien Van Bellegem (UCL) receives
the Marie-Jeanne Laurent-Duhamel Price

The « Marie-Jeanne Laurent-Duhamel price » is delivered by the French Statistical Society (SFdS) to the best PhD thesis written by a French-speaking young statistician. It is delivered every two years to a noteworthy contribution to fundamental research, and every two years to a PhD thesis in applied research. In 2005, the price is given to a work in fundamental research.

The price laureate this year is Sébastien Van Bellegem (UCL), for his PhD thesis "Adaptive methods for modelling, estimating and forecasting locally stationary processes" (supervised by Rainer von Sachs). A summary of this thesis appeared in the Issue 30 of our Bulletin.

The price will be delivered during the annual meeting of the French Statistical Society in Pau (6-10 June 2005), where the laureate is invited to present his work in a plenary session.

Obituary

Franz Monfort, PhD in engineering, former professor of statistics and of biostatistics at the University of Liège, died on 6 April 2005 at the age of 90 years.

Francisco Sartor, PhD in public health, member of the SBS-BVS and working at the Scientific Institute of Public Health - Louis Pasteur, Brussels, died on 3 May 2005 at the age of 57 years.

FORTHCOMING STATISTICAL EVENTS
IN BELGIUM

May 3-4, 2005 – Louvain-la-Neuve – Short course *Introduction to Bayesian Inference in Biomedical Applications* (Instructor: Nicky Best) organized by the Biostatistics Section of the SBS-BVS.
Website: http://www.stat.ucl.ac.be/~lambert/BiostatSection/

May 17, 2005 – Ghent - Symposium on *Statistical Genetics.*
Website: http://www.cvstat.ugent.be/

September 12-16, 2005 – La Roche en Ardenne – European courses in advanced statistics *Regression quantiles and applications*. Contact person: Catherine Vermandele.
Website: http://www.ulb.ac.be/soco/lmtd/ecas2005

October 14-15, 2005 – 13th Annual Meeting of the BVS-SBS, organized by the University of Ghent. Contact person: Olivier Thas.
Website: http://www.bss2005.be/

November 16-17, 2005 – Woluwé-St-Lambert – EORTC – Workshop (November 17) on *Bayesian inference with biomedical applications* organized by the Biostatistics Section of the SBS-BVS in collaboration with the 3CC (Three Country Corner). It will be preceded by a short course with a similar theme on November 16.
Details soon available at
http://www.stat.ucl.ac.be/~lambert/BiostatWorkshop2005

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Katholieke Universiteit Leuven

University Center of Statistics

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RECENT PhD THESES

Faculté universitaire des Sciences agronomiques de Gembloux

Akossou Arcadius Yves Justin. *Impact de la structure des données sur les prédictions en régression linéaire multiple* (Avril 12, 2005 – Promotors: R. Palm et H.N. Fonton).

Multiple linear regression is the major method used in regression. The most frequent use for this method is prediction. The aim of this work is to study the impact of data structure on prediction in order to determine the limits for using the linear regression.

In first part, a bibliographical synthesis is carried out on model selection techniques in multiple linear regression. Then, the concepts of omission bias and selection bias of variables are illustrated starting from a simulated example. The consequences of variables selection on the regression coefficients and the predicted values are also examined starting from this example. The user's attention is drawn to the risks of misinterpretation of the coefficients.

The study of impact of the data structure on prediction is carried out for the most used regression methods in practice. Stepwise regression is used for the selection of the variables and the traditional method of least squares for the estimate of the regression coefficients. Simulation of linear models is used to cover a wide range of data structures. On the whole 1080 data structures are generated. Initially, the results of this study made it possible to analyze the sampling distribution of some parameters. From this analysis, it comes out that the theoretical values of the majority of these parameters are not biased asymptotically. Thus, according to the ratio k/n, tables were drawn up to quantify the importance of the estimation bias. In addition, the results showed that the predictions are influenced by the theoretical coefficient of determination, the ratio k/n, the number of explanatory variables, the method used to establish the model, the type of model and to a lesser extent the collinearity between the explanatory variables and the index of decrease of the regression coefficients. In a total way the limits for using prediction models are obtained for the complete random models when the level of the ratio k/n is approximately 11/20. This level varies between 13/20 and 15/20 when one carries out a selection of variables at a significance level of 0.15 or of 0.05. On the other hand, it is 14/15 for the complete fixed models and 15/20 for the fixed models established with one or the other significance level of selection. Tables are also drawn up to quantify the prediction quality.

Facultés Universitaires Notre-Dame de la Paix, Namur

Vincent Bertholet. *Density Estimation Contributions to Discrimination Trees – Real Applications* (September 3, 2002 - Promotor: J.-P. Rasson)

This thesis is developed around two concerns. The first one is to detail two new discriminant procedures based on classical statistical methods: discrimination trees and non parametric density estimation. The philosophy is to recursively search for the best variable and the best way to divide the training set with this variable with the intention of constructing the purest tree. The nodes division is the main difference between these procedures. The first one use the bayesian rule while the second is based on non homogeneous Poisson process. These methods are illustrated on small data sets and simulated data.

The second concern is to apply these processes to problems rising from real applications: remote sensing images classification, early detection of enterprises bankruptcy and micro-arrays data analysis. The density estimation contributions are developed for each of these applications.

Catherine Charles. *Some Wavelets Applications to Signal and Image Processing* (January 29, 2003 - Promotor: J.-P. Rasson)

The purpose of this thesis is to highlight the contribution of wavelets in two particular fields of uni- or multi- dimensional signal processing. On one hand, in experimental sciences such as HREELS or XPS, the recorded data is often modelled as the convolution product of an unknown instrumental function with an ideal signal to estimate, product embedded in a Poisson noise. In this work, we show that the wavelet processing is adapted in the Poisson noise filtering and in the detection of characteristics of a signal. The results obtained form synthetic and experimental signals confirm the efficiency of wavelets. On the other hand, in image analysis, a crucial question concerns the division of an image into homogeneous regions with or without the help of training sets. In this work, we show that the wavelet processing is adapted for the estimation of the intensity of a Poisson process, of the density of a population and of the detection of edges; three main steps in image classification. Again, results obtained on actual images emphasize the efficiency of wavelets.

Jean-Yves Pircon. *Clustering and Poisson Processes for New Partitioning Monothetic Method*s (June 7, 2004 - Promotor: J.-P. Rasson)

This thesis develops new partitioning methods based on the Poisson processes, on the one hand homogeneous, on the other hand non homogeneous. The principle of the construction is of hierarchical divisive monothetic type. Consequently, a variable is selected at each stage to cut a group in two subsets, and so on in a recursive way. The original criterion consists in maximizing "the gap" between the data. This last-one is deduced from the criterion of maximum likelihood. Then, two different phases of simplification of the groups take place, namely pruning and gluing. To do so, a criterion based on inertia and two others based on Gap Test are developed. Theoretical properties, as well as algorithmic complexity are examined. Then the methods are tested on small examples in order to differentiate them. Lastly, two financial applications using one of the methods are proposed.

Katholieke Universiteit Leuven

Marc Callens. *Essays on Multilevel Logistic Regression* (November 22, 2004 – Promotor: C. Croux)

This doctoral thesis contains four essays on multilevel logistic regression. This statistical technique is especially suited for simultaneously assessing the effect of individual and contextual variables on binary dependent variables. An example is poverty, where being poor or non-poor can be explained by both personal characteristics and characteristics of the region where the person lives.

A first part of this work is methodological. By means of a simulation study, the performance of likelihood-based estimation methods for multilevel logistic regression is compared. Another research topic here is which individual-level and municipality-level characteristics determine non-response in a survey.

In a second part, this method is applied to socio-economic problems. Based on data for 15 European countries, it is first questioned whether the educational level of the mother has an effect on the propensity to have a third child and whether this effect varies across countries. As expected, the effect of education on the propensity to have a third child is found to be negative. This education effect is not significantly weakened by the Nordic countries.

Next, poverty dynamics in the European Union is studied. Here, the research question is which life cycle events and structural factors have an influence on entry into and exit from poverty. Main findings are that poverty dynamics are dominated by life cycle events such as a divorce or finding a job. But, structural factors such as the welfare regime also play a role.

Dirk Hoorelbeke. *Bootstrap and Pivoting Techniques for Testing Multiple Hypotheses* (January 28, 2005 - Promotor: G. Dhaene)

In this thesis some proposals are made to improve the performance of (multiple) hypotheses tests. Two main routes are taken to provide these improvements: the bootstrap and robust methods. In most econometric applications one does not know the exact distribution of the test statistic. One way or another, the exact finite sample distribution has to be estimated. The standard method is to use the asymptotic distribution, and is called first-order asymptotic theory. If one wants to improve upon this method, one possibility is to calculate second-order expansions, leading up to so-called Bartlett corrections. These methods are applied to the statistic itself (or its distribution), while in this thesis it is argued that one can do better by altering the statistic in a different way.

The first chapter introduces a new information matrix (IM) test, which uses the (parametric) bootstrap to estimate the variance matrix to be used in the quadratic form of the test statistic. Previous versions of the IM test statistics all use an estimate of the asymptotic variance matrix. Here, it is argued that to improve the finite sample performance of the test, it might be better to use an estimate of the finite sample variance matrix. To approximate the latter, one has to resort to simulations. Since we are in a parametric setting, the parametric bootstrap can be used. It is shown that, if the model is correctly specified, the new test statistic has an asymptotic Hotelling's T^2 distribution (depending on the number of simulations used to approximate the bootstrap variance matrix). The error in rejection probability under the null hypothesis and the power against a heteroskedastic alternative in finite samples is studied using some Monte Carlo simulations.

In the second chapter a method is proposed to enhance the performance of the score test that differs from the standard bootstrap correction procedure. The test is corrected in two ways. The first step is to transform the score vector such that it is asymptotically (or exactly) pivotal. To achieve this one can use the inverse of a square root of a consistent variance estimate of the score vector, although other possibilities exist. By bootstrapping the transformed score vector, a second-order correct variance matrix estimate is obtained to be used in the quadratic form score test statistic. In the second step, the bootstrap simulations are recycled to compute a second-order correct critical value, hereby avoiding a nested bootstrap. Monte Carlo simulations for the IM test show that the corrected test outperforms the standard IM test both in terms of error in rejection probability and power.

Empirical data often contain outliers, due to measurement errors or certain shocks. If one wants to model data containing heavy outliers, standard estimators such as least-squares break down. This is all the more

true in a multivariate setting, where one is not always aware of the presence of outliers. The IM equality can be used to test for misspecification of a parametric model. In the third chapter the behaviour of the IM test is studied when the maximum likelihood (ML) estimators used in the construction of this test are replaced with robust estimators. The latter do not suffer from the outlier-masking effect and can improve the power of the IM test. At the normal location-scale model, the IM test using the ML estimators is known as the Jarque-Bera test, and detects deviations from normal skewness and kurtosis. When robust estimators are employed to test the IM equality, a robust version of the Jarque-Bera test emerges. The local asymptotic power of the IM test is investigated for various estimators and under a variety of local alternatives. For the normal regression model, it is shown by simulations under fixed alternatives that in many cases the use of robust estimators substantially increases the power of the IM test.

In the last chapter robust standard errors for robust regression estimators are proposed. A (regression) estimator is said to be robust if it is still reliable in the presence of outliers. In the econometrics literature, standard errors are termed robust if they are still reliable when the regression errors are autocorrelated and/or heteroskedastic. This chapter shows how robust standard errors can be computed for several robust estimators of regression, including MM-estimators. The improvement relative to non-robust standard errors is illustrated by means of large-sample bias calculations, simulations, and a real data example. It turns out that non-robust standard errors of robust estimators may be severely biased. However, if autocorrelation and heteroscedasticity are absent, non-robust standard errors are more efficient than the robust standard errors that we propose. Therefore, a test is presented to test the hypothesis that the robust and non-robust standard errors have the same probability limit.

Christel Faes. *Flexible modeling of correlated multivariate data with applications in animal studies.* (September 17, 2004 - Promotor: Helena Geys and Marc Aerts)

Correlated data are common in many health sciences studies, where clustered, multivariate, longitudinal and spatially organized data are frequently observed. Failure to account for the effects of clustering can result in erroneous estimation of the variability of the parameter estimates, and hence in misleading inference. In this thesis, flexible modelling of clustered categorical and multivariate data is topic of interest. Main focus is on risk analysis modelling in developmental toxicity studies.

To investigate the potential risk of exposures on birth defects and developmental abnormalities, developmental toxicity studies in laboratory animals are conducted (Williams and Ryan 1996). These studies typically result in multiple outcomes of interest (malformation, birth weight, death). Further, foetuses within the same litter are very likely to be correlated because of the genetic similarity. Aside from the basic challenges of developing good multivariate models, particularly in the clustered data setting, additional technical challenges arise in applying these models in real data settings. For example, correlation structures are likely to change with exposure (Kupper et al. 1986). Also, determining how to use a complex model for risk assessment purposes is another area of interest.

In the hazard identification and safe dose determination, proper flexible predictor models have to be used to get reliable results. In a first research topic, the effect of misspecification of the dose-response model on the estimation of a safe level of exposure was investigated. Although classical polynomials are very customary, they are often inadequate, especially when low dose extrapolation is envisaged. In contrast, fractional polynomials (Royston and Altman 1994) are much more flexible to attain the correct benchmark dose, even when the probability model is misspecified. Another flexible predictor model is a non-linear power model. Such a non-linear model poses non-trivial methodological challenges, because of the non-identifiability of certain parameters under the null hypothesis of no dose effect. A Bayesian method to test for no dose trend in the power model and in addition accounting for the clustering in the data is proposed.

When interested in a safe level of exposure, it is of major importance to account for all possible adverse effects. Often, focus is only on the outcome that is most sensitive to the exposure when performing quantitative risk assessment. But, use of univariate methods to determine a safe dose level can yield unreliable, and thus unsafe, dose levels. Typically, both malformation (binary or ordinal) and birth weight (continuous) are recorded

on each viable embryo. A likelihood-based method, based on the Plackett-Dale methodology, for the joint analysis of ordinal and continuous outcomes in a clustered setting is proposed. Further, since also the litter size is affected by the dose of a toxic agent, a hierarchical model accounting for the full data structure was investigated.

Challenging issues arise in various other settings as well. In the field of neurophysiology, a method to measure the synchrony of two binary spike trains was proposed. In the context of veterinary epidemiology, a herd-specific force of infection of infectious diseases was investigated. In neuro-gastroenterology, a mixed model approach to describe the spatial and temporal location of neuron spikes in part of the small intestines was described. Although the methods in this thesis are developed in specialized fields of interest, the proposed methodologies are applicable in a general clustered or correlated data setting.

Universiteit Antwerpen

Gert Willems. *Methods for robust multivariate inference* (September 24, 2004 - Promotor: S. Van Aelst)

There are several situations in regression analysis, or multivariate location and scatter problems, where it is desirable to use robust estimators instead of the classical estimators. The idea of robust estimators is that they are able to resist contamination present in the data set, for example in the form of so-called outliers. Preferably, they should also be as efficient as possible in case of ``clean'' data.

Since over thirty years now, a vast amount of literature has emerged on such estimators, but the inference part is often being neglected. That is, often it is not clear how to obtain a reliable estimate for the variability of the robust point estimate, how to obtain accurate confidence limits for parameters that are being estimated, or how to perform valid hypothesis tests based on robust estimators. Mostly, asymptotic variance results are used for this purpose. However, such asymptotic estimates may be inaccurate for small sample sizes and often are clearly inappropriate in situations where robust estimators are recommended.

This thesis aims to contribute to the development of improved inference procedures for robust estimators, mainly through the bootstrap method. Indeed, resampling techniques such as Efron's bootstrap constitute the obvious alternative to the asymptotic approach. However, some drawbacks arise when applying the classical bootstrap to robust estimators. The most serious of these is the computational cost of the bootstrap procedure: computing robust estimators often takes time-consuming algorithms and the classical bootstrap method requires the estimator to be recalculated many

times.   A second aspect of concern is that bootstrap inference can be adversely affected by contamination in the data, even if the estimator itself was able to resist all outliers. In other words, the bootstrap estimates are less robust than the estimates that are being bootstrapped. Several general approaches for handling the robustness problem are available. A general procedure to speed up the bootstrap method however is not.

In particular now, we propose and investigate fast and robust inference procedures for Minimum Covariance Determinant estimation of multivariate location and scatter, for Least Trimmed Squares estimation of linear regression, for S-estimators of multivariate regression, and for MM-estimators of shape and scatter with applications to principal components analysis.

VACANCY

Vrije Universiteit Brussel

The Faculty of Sciences of the Vrije Universiteit Brussels invites applications for a

Full-time Academic Position in Statistics
(WE/2005/010)

The vacancy concerns a tenure-track position in the Department of Mathematics.

Tasks
-Teaching: in the Bachelor and Master program of the Department of Mathematics (especially for the specialization "stochastics/financial mathematics'') and possibly some service teaching for other departments and faculties. The candidate should be an excellent teacher. He/she would also supervise projects in the bachelor program and direct theses in the master program of mathematics.
-Research: The research area of the candidate should be STATISTICS with a proven record of excellence in one of the following areas: applied statistics, stochastic processes and applications, (actuarial) risk theory, financial mathematics and applications. Strong candidates in related areas also might be considered.
-Other tasks: It is expected that the candidate further strengthens the co-operation with other Departments of the University and that he/she substantially contributes to the Master specialization "stochastics/financial mathematics". An interest in actuarial sciences is a plus. The candidate will actively participate in all aspects of the Ph.D. program of the Department. The candidate should also attract external funding for research projects.

Teaching languages are Dutch and English. Non-Dutch speaking candidates are encouraged to apply as well; a training period may be considered for such candidates.

Starting date: October 1, 2005 or later depending on the constraints of the candidate.

Candidates should apply within **1 month** after publication of this vacancy in the Belgisch Staatsblad. (This date will be posted on the website http://www.vub.ac.be//DWIS/).

Diploma
The candidate should have a Ph.D. degree in mathematics or statistics.

Contact person
  Prof. Eric Jespers, Chair, Department of Mathematics
  e-mail: efjesper@vub.ac.be   tel. +32-2-6293493

Application procedure
Applications (including a CV, a list of publications, names of 3 referees) should be sent   to the Rector, Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussel, BELGIUM preferably with a copy or e-mail with DOC/TEX file to Ms. K. Segers, Department of Mathematics, Faculty of Sciences, Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussel, Belgium (kasegers@vub.ac.be)