August 21, 2018

CV Terje Aven

Born: 1956, Nationality: Norwegian, Degrees: Master's degree (cand. real) and PhD (dr. philos) in Mathematical Statistics and Risk/Reliability Analysis from the University of Oslo, 1980 and 1984, respectively. Professor of Risk Analysis and Risk Management at the University of Stavanger (UiS) (1992-). Aven is Editor-in-Chief of Journal of Risk and Reliabilty, and Area Editor of Risk analysis in Policy, and he is currently President of the international Society for Risk Analysis (SRA). He was the Chairman of the European Safety and Reliability Association (ESRA) in the period 2014-2018 (June). He is also a principal researcher at the International Research Institute of Stavanger (IRIS) (1985-).

His professional career includes five years in the petroleum industry (Statoil) and more than 30 years in research and education. He was Professor II (adjunct professor) in Reliability and Risk Analysis at the University of Oslo 1990-2000 and Professor II in Safety and Risk at the University of Trondheim (Norwegian Institute of Technology) 1990-95. He was Dean of the Faculty of Technology and Science 1994-96, and Assistant Dean 1992-93 at UiS (then Stavanger University College). He was consultant for Technica and DNV within the fields of Safety, Risk, Reliability and Emergency Preparedness in 1990-95. He was a research fellow at DNV, London in 1995 (six months) and at the University of California, Berkeley, in 1984 (six months).

In the period 2013-2016 he was *a Director of Gassco AS, the operator of the integrated system for transporting gas from the Norwegian continental shelf to other European countries.*

Since 1987 he has led the risk group at UiS. He has had a main responsibility for the master and PhD programs in the risk field, first as specialisations within petroleum and offshore technology, then the last 10 years in Risk Management. He has taught courses in a varity of topics within reliability, risk and safety in these programs. In recent years he has had a class in Risk Analysis and Management (in English) with about 150 students, about half of whom are international students. He has been supervisor for more than 200 master theses, and he has supervised more than 40 PhD students in Reliability, Risk and Safety, including the present six (about ten of these as co-supervisor) (G. Løvås, H. Haukås, K. Sandve, L.B. Andersen, O. Njå, W. Rettedal, S. Apeland, E.F. Nilsen, J. Kørte, T. Nilsen, V. Kristensen, M. Sandøy, A. Hjorteland, W. Røed, E. Abrahamsen, K. Eidesen, D. Hager, B. Heide, E.L. Rake, S. Sollid, R. Flage, R. Steen, T.E. Nøkland, A.R. Nilsen, J. Selvik, M. Tuntland, H. Bjelland, H. Veland, J. Khorsandi, Ø. Amundrud, A. Gelyani, H.B. Vormeland, T. Bjerga, C. Berner, , A. Jensen, I. Årstad, K. Bjørnsen, L. Fjæran, M. Røyksund, Tore Askeland, Kaia Stødje)

His research covers a broad spectrum of topics within risk analysis and risk management, including mathematical statistics; stochastic modelling in reliability and risk; foundational issues in risk analysis and management; risk acceptance criteria and risk reduction processes; risk analysis methods; societal safety; risk management and ethics; assessment of security and terrorism risk; and reliability and maintenance. He has written about 225 papers in peer-reviewed international journals and 15 scientific books (research mongraphs) in these topics.

He has participated in/led a large number of risk and safety related industry and research projects, including Statoil projects, Norwegian Research Council projects, IRIS projects, and one EU project – ValueSec. The Norwegian Research Council funded projects include "HSE Decision Support Principles and Methods" (2000-03); "Risk and Uncertainty – Risk Analysis and Decision-Making" (2002-06); "Regularity and Uncertainty Analysis and Management for the Norwegian

Gas Production and Transportation System", RAMONA (2006-2011); "Investment Principles for Societal Safety" (2007-2011) and "Improved risk assessments – to better take into account the knowledge dimensions and the unforeseen (Black Swan)" (2013-2017) (Aven being the project leader for the last three projects). The RAMONA project was also funded by the industrial partners, Statoil and Gassco, and was a joint project with University of Bergen and NTNU/SINTEF and had a budget of about €4 mill. The "Investment Principles for Societal Safety" project was run as a research project with many national and international participants. The Improved Risk Assessment project has a similar structure – it has support from Gassco, The Norwegian oil and gas association, ConocoPhillips and the Petroleum Safety Autorithy Norway. In the period 2013-2017 Aven worked on a project for the Norwegian Oil and Gas Association, focusing on risk and knowledge.

Aven has an extensive international network of collaboration with other institutions and researchers related to research projects, supervision and course management. He has co-authors from, for example, Univ. of Newcastle, Univ. of Ulm, University of Stuttgart, Erasmus University Rotterdam, Politechnic of Milan, Ecole de Central Paris, John Hopkins University, Texas AM University, University of Michigan, KTH, NTNU and SINTEF.

Aven has been a member of the Society for Risk Analysis (SRA) Council since December 2013, chairing partly the Conference & Workshop Committee and the Specialty Group Committee in his first three year period. He was SRA President-Elect in 2017 and Chair of the Program Committee for the SRA Annual meeting in Arlington US December 11-13 December 2017 (800 participants). He has taken initiative to create a new SRA Specialty Group (SG) on Foundational Issues of Risk Analysis, and have managed the work related to this SG from 2013 to 2016, see http://www.sra.org/news/terje-aven-sra-member-founds-new-specialty-group. As a part of this work he has led the development of some recent SRA documents and related processes for strengthening the foundation of risk analysis as a field and science, including a new SRA Glossary, a list of core subjects for the risk field, and a set of key principles of risk analysis (www.sra.org/resources).

For several years he has been a member of the technical committees for the international conference ESREL (European Safety and Reliability Conference) and PSAM (Probabilistic Safety Assessment and Management). Aven was a member of the Board of the Norwegian chapter of ESRA (European Safety and Reliability Association) for many years, and vice chair for two years. He was the Chairman of ESRA in the period 2014-2018, following a period of four years as Vice Chairman. He is a member of the Norwegian Academy of Technological Sciences (1995-), of which he was head of the Stavanger Chapter 2005-07. He has had and has many other admistrative/scientific tasks, for example, board member of the Centre of Risk Management and Societal Safety (SEROS) at UiS, member of the international Scientific Advisory Committee for the Laboratory of Excellence at Universite de Technologie de Compiegne, France, and the Risk Institute of Grenoble.

He is *Editor-in-Chief* of *Journal of Risk and Reliabilty* (before he became EiC early 2016, he was a member of the Editorial Board for many years). He is an Area Editor of *Risk Analysis* in Policy (before this appointment in early 2014 he was a member of the editorial board for many years), and Editor Europe of the *International Journal of Performability Engineering*. He was associated editor of *Journal of Applied Probability* on Reliability Theory in the period 2008-2018. He is a member of the editorial board for the journals *Reliability Engineering and System Safety* (RESS), *International Journal of Reliability and Quality Performance*, *Journal of Materials and Structural Reliability*, *Journal of Risk and Uncertainty in Engineering Systems,* and *International Journal of Business Continuity and Risk Management*.

Aven has played a key role in the development of the educational programmes at master and PhD level in Risk management and societal safety at UiS. Several programs are offered (with about 100 master students per year and at any time about 25 PhD students), with a staff of about 15 professors and associate professors.

Aven has together with the consultancy company Proactima developed a comprehensive educational program in the safety and risk area for people working in industry and public sector.

He has been the guest editor for special issues for the journal *RESS, Journal of Risk Research, Safety Science,* and *Journal of Risk and Reliability (JRR).*

He is a reviewer for a large number of scientific journals, including *Risk Analysis*, *Reliability Engineering and System Safety,* and *Safety Science* (more than 30 reviews a year). He received the best reviewer reward from *Risk Analysis* 2013 and Certificate of Excellence in reviewing from *RESS* 2013. He has also for several years been a reviewer for papers for *Mathematical Reviews*.

He has also reviewed several international research projects, and he has been a member of a number of committees for academic positions at Norwegian and foreign universities and colleges; among these more than 10 full professorships (three in Sweden). He has served as an opponent/examiner at a considerable number of PhD dissertations in Norway and abroad. He was a member of the Norwegian Committee for Professor Promotion in Probability/Statistics with Applications in the period 2004-2010.

Aven has written many feature articles for newspapers, addressing various topics related to his research and education, for example *Stavanger Aftenblad*, to which he in the period 2012-2013 contributed every six weeks.

10 years track record for Professor Terje Aven

Aven has published in total 225 papers in peer-reviewed international journals. A total of about 12400 citations yielding an h-index of 59 and an iI10 index of 180. The corresponding numbers since 2013 are 7700, 47 and 131. The three best cited publications have about 680, 520 and 450 citations, respectively. See
https://scholar.google.com/citations?user=q0OCFMwAAAAJ&hl=en
Aven has written 15 scientific books (research monographs).

About 60% of the journal papers have been published in high quality journals such as *Risk Analysis*, *Reliability Engineering and System Safety* and *Safety Science*. According to the Norwegian rating system for research, where one journal paper, with a single author, is given a score of 1 or 3 depending on the quality of the journal, Aven is among the most active researchers in Norway with an average score of about 26 for the nine years 2006-2015. Aven's department, Industrial Economics, Risk Management and Planning, had one of the highest scores in Norway in 2010 and 2011, independently of discipline, with average scores of 5.6 and 5.7 per scientist. See https://khrono.no/2017/06/topp-100-forskere, and
http://www.uis.no/om-uis/nyheter-og-presserom/uis-paa-forskningstoppen-i-norge-article60329-8108.html.

12 selected publications in peer-reviewed journals last ten years (with a weight on recent work)

Aven, T. (2007) On the ethical justification for the use of risk acceptance criteria. Risk Anal. 27, 303-312.
In the paper Aven performs a rethinking of the regulation approach based on the use of risk acceptance limits: it is concluded that its ethical justification is not stronger than for alternative approaches.

Aven, T. and Renn, O. (2009) On risk defined as an event where the outcome is uncertain. J. Risk Research, 12, 1-11. The meaning of a commonly used risk perspective in the social sciences is clarified and a new definition suggested. This paper is one of the most cited and downloaded papers in J. Risk Research. High citation.

Aven, T. (2010) On the need for restricting the probabilistic analysis in risk assessments to variability. Risk analysis 30, 354-60. 381-84. The paper clarifies the role of subjective probabilities to describe epistemic uncertainites in a risk analysis context. The paper is followed up with a discussion of four other experts.

Aven, T. and Nøkland, T.E. (2010) On the use of uncertainty importance measures in reliability and risk analysis. RESS, 95, 127-133. The paper carries out a rethinking of the understanding and use of uncertainty importance measures in reliability and risk analysis.

Aven, T. (2011) On different types of uncertainties in the context of the precautionary principle. Risk analysis. 31(10), 1515-1525. With discussion 1538-1542. The paper provides new insights on the uncertainty dimension of the precautionary principle. The paper is followed up with a discussion of three other experts in the risk field.

Aven, T. Renn, O. Rosa, E. (2011) On the ontological status of the concept of risk. Safety Science. 49, 1074–79. Clarifications are made wrt the existence of a risk concept per se and how it is measured.

Aven, T. (2012) The risk concept. Historical and recent development trends. RESS. The paper identifies some underlying patterns in the way risk has been, and is being understood today. The work is based on a new categorisation of risk definitions and an assessment of these categories in relation to how these risk definitions match typical daily-life phrases about risk.

Aven, T. and Krohn, B.S. (2014) A new perspective on how to understand, assess and manage risk and the unforeseen. RESS, 121, 1-10. Open Access. A new perspective on risk which draws on the concept of mindfulness and ideas from the quality discourse. Very high download numbers.

Aven, T. (2014) What is safety science? Safety Science. 67, 15-20. The paper provides new insights on the scientific basis of the safety and risk fields.

Aven, T. (2015) On the allegations that small risks are treated out of proportion to their importance. RESS, 140, 116-121. Open Access. It is argued that uncertainty is a key component of risk, and against some common theses about risk.

Aven, T. (2016) Risk assessment and risk management: review of recent advances on their foundation. European Journal of Operational Research, 25: 1-13. Open access. Invited paper. Very high download numbers (currently more than 80000).

Aven, T. (2017) An Emerging New Risk Analysis Science: Foundations and Implications. Risk Analysis. Paper providing the platform for a distinct risk analysis science.

Five selected books, monographs

Aven, T. (2014) Risk, surprises and black swans. Routledge, New York. The book presents an updated perspective on risk which highlights the uncertainty and knowledge dimensions.

Aven, T., Baraldi, P., Flage, R. and Zio, E. (2014) Uncertainty in Risk Assessments. Wiley. The book presents and reflects on different types of uncertainty characterizations in risk assessment, probability and alternative approaches.

Aven, T. and O. Renn (2010) Risk Management and Risk governance. Springer. The book present a unifying perspective to risk management/governance based on the scientific pillars introduced by Aven & Renn (2009).

Aven (2010) Misconceptions of Risk. Wiley. The book discusses common conceptions of risk and argues that many of them are to be considered as misconceptions.

Aven (2011) Quantitative Risk Assessment: The Scientific Platform. Cambridge U. Press. The book provides a framework for evaluating the scientific quality of risk assessment, highlighting the criteria reliability and validity.

Selecteed invited recent presentations at major international scientific conferences etc.

In recent years Aven typically has about 10 annual major invited external presentations at national and international conferences, workshops etc. Here are some recent selected examples:

- Keynote speaker SRA-Benelux, Mol Belgium, 26 March 2018.
- Plenary Panel SRA, Is Risk analysis an obsolute profession? Arlington USA, December 11-13, 2017.
- Key note speaker: Security Risk: What is it and how should it be expressed? SRA-Nordic Espoo Finland, 2-3 November 2017.
- Keynote speaker WOS: Foundations of risk assessment and management. Prague 3-5 October, 2017.
- Invited talk: Risk Management. The well-integrity workshop June 14, 2017, Stavanger
- Invited key talk Workshop Zurich March 29 2017 on Risk and energy. Title talk: Foundational Issues of Risk Assessment
- Invited talk. Some foundational issues related to cost benefit and risk. International Workshop: Integrating economic and safety perspectives in risk management – a necessity for success? October 31, 2016.
- Invited talk. Enhanced risk understanding. Petromaks conference, Offshore North Sea (ONS), Stavanger, August 31, 2016.
- Invited talk. Black swans - how to deal with them? Sola conference aviation. September 20, 2016.
- Keynote speaker, SRA-Nordic. What is risk science? Lund Sweden, November 16-17, 2015.
- Keynote speaker. How leaders should think in relation to risk. Quality and risk management conference, Oslo 9th November 2015
- Invited Speaker Risk Series, Sandia National Laboratories, USA, 25th June 2015
- Keynote speaker, Risk, surprises and black swans. International Conferences of ICRESH-ARMS 2015, Lund Technical University, Sweden, June 2, 2015.
- Invited talk Workshop: Risk and RAMS in Railway – Past, Present and Future. Lund Technical U. Sweden, June 2, 2015.
- Invited talk at University Lausanne, Switzerland. How to define and interpret a probability in a risk and safety setting? 22/4-15.
- Invited speaker Metropol, København, Denmark, Black swans, 28 May, 2015.
- Invited speaker Risk management conference. Norwegian Petroleum Society. Transition to the next level of risk management, 3rd Februray 2015.
- Keynote speaker, Improved risk assessments. Risk seminar Lunds University, 25/11-2014.
- Invited plenary speaker, ESREL 2014. Foundations of risk and reliability analysis and management. Poland, Wroslaw 19/9-14.
- Invited speaker: What does a PhD really means? (In Norwegian). Research administration conference. Stavanger, 2 June 2014.
- Opening invited speaker: Black swans. (In Norwegian). Fire and Explosion Conf. Haugesund 6 May 2014.
- Invited speaker: Acceptable risk. Explicitly dealing with safety: learning from excellence in Europe. Den Hague 22-23/4-2014. Ministry of Infrastructure and Environment.
- Invited talk: A conceptual foundation for assessing and managing risk, surprises and black swans. NeTWork; 2013, 11-13 November. Toulouse France.
- Invited talk: Black swans in a risk context. EU, JRC, ISPRA Italy. 21 June 2013.

- Keynote speaker: Risk does exist. The biannual conference of the European Sociological Association Research Network on Risk and Uncertainty, Amsterdam, 23-25 January, 2013.
- Plenary speaker: Risk assessment, uncertainty and recommendations for improvements. Annual Nordic Symposium on Nuclear Technology, Stockholm 4-5 December, 2012.
- Keynote speaker. Some fundamental concepts, ideas and principles in risk-informed planning: recent developments and perspectives. NATO Risk-Based Planning Conf. 3-5 Oct 2011, Salisbury, UK
- Keynote speaker. Misconceptions of risk. Society of Risk Analysis - Europe, Stuttgart, 7/6-2011.
- Keynote speaker ESReDA, Risk analysis foundations. ESReDA, Bordeaux France, 25/5-2011.

Organisations of international conferences, workshops etc.

Aven was the Chairman of ESREL 2007 (Stavanger 25-27 June 2007), a conference with about 400 participants. He was also the Chair of the technical programme for the PSAM 11-ESREL 2012 conference in Helsinki 2012, which had about 750 papers and 820 participants. He has recently initiated and organised several workshop on risk: 1) Los Angeles 22-23 January 2010 with a scope linked to uncertainty in risk asessments 2) Saló, Italy, 3-4 August 2012, addressed foundational issues in risk assessment and management, 3) Stavanger 20 February 2014 on Black swans in risk analysis and 4) Donnafugata, Sicily, Young researcher workshop: The future of reliability and risk analysis (co-organiser E. Zio) and 5) University of Michigan. The risk science (co-organiser S. Guikema), May 2016. 6) Sardinia, TC ESRA June 1-2, 2018 (co-organiser E. Zio), 7) Excellence in Risk Analysis, June 29-30, 2018, Traverse City, US (co-organiser Seth Guikema). He organised a Roundtable at the SRA Conference in December 2015 in Arlington, USA on Foundations of Risk Analysis. Aven was a General co-chair of the ESREL 2016 conference in Glasgow 2016 in Slovenia in June 2017.

Prizes and Awards

Aven has been awarded several prizes at UiS for his research, research management, and teaching activities (including the Lyse and Scana research prizes), as well as a national safety prize for his safety related work on research and teaching. Recently, his papers "On the Risk Management and Risk Governance for Petroleum Operations in the Barents Sea area" (with co-author O. Renn) and "The concept of antifragility and its implications for the practice of risk analysis" were selected as a Best Paper for the journal Risk Analysis. In June 2015 he received the Lifetime Achievment Award from the Society for Reliability and Safety (SRESA) in recognition of his "Pioneering Contributions in the area of Reliability and Risk Assessment".

Videos

- As scientific Advisor for Norwegian Oil and Gas Association, development of several videos, including https://youtu.be/UfzD4MqA9y8 and http://youtu.be/7WKkjMMhqzI.
- Work on developing a risk Glossary for Society for Risk Analysis and Core Subjects of Risk Analysis (www.sra.org/resources)
- Other videos on the risk concept and the risk field: https://www.youtube.com/playlist?list=PLNFAW9iarHu_kP9n34CSPRoUM8h1hBojp

All books

Aven, T. (2014) *Risk, surprises and black swans*. Routledge, New York.
Aven, T., Baraldi, P., Flage, R. and Zio, E. (2014) *Uncertainty in Risk Assessments*. Wiley
Aven, T. (2011) *Quantitative Risk Assessment: The Scientific Platform*. Cambridge University Press.
Aven, T. and Renn, O. (2010) *Risk Management and Risk Governance*. Springer Verlag.
Aven, T. (2010) *Misconceptions of Risk*. Wiley.
Aven, T. (2008) *Risk Analysis. Assessing Uncertainties beyond Probabilities*. Wiley.
Aven, T., Røed, W. and Wiencke, H. (2008) *Risk Analysis* (in Norwegian). The University Press.
Aven, T. and Vinnem, J.E. (2007) *Risk Management, with Applications from the Offshore Oil and Gas Industry*. Springer Verlag.
Aven, T. (2007) *Risk Management: Principles and Ideas* (in Norwegian). Universitetsforlaget.
Aven, T. (2003,2012) *Foundations of Risk Analysis – A Knowledge and Decision Oriented Perspective* Wiley. 2nd ed. 2012.
Aven, T., Njå, Sandve, Olsen, Boyesen (2004) *Societal Safety* (in Norwegian). The University Press, Oslo.
Aven, T. and Jensen, U. (1999, 2013) *Stochastic Models in Reliability*. Springer-Verlag,
Aven, T. (1994) *Safety Management in the Petroleum Industry* (in Norwegian). The University Press, Oslo.
Aven, T. (1992) *Reliability and Risk Analysis*. Elsevier.
Aven, T. (1990,94,98,06) *Reliability and Risk Analysis* (in Norwegian). The University Press, Oslo.

Books (editor)

Aven, T. (ed) (1989) Reliability Achievment. SRE Symposium. Elsevier Applied Sciences.
Aven, T. and Vinnem (eds) (2007) ESREL 2007 Proceedings.
Aven, T. and Zio, E. (eds) (2018) Knowledge in risk assessment and management. Wiley. N.Y.

All papers in international journals with referee (1983-)
(* papers in journals at level 2 according to Norwegian ranking system)

1. Aven, T. (1983) Optimal replacement under a minimal repair strategy - a general failure model. J. Appl. Prob.15, 198-211. *
2. Aven, T. (1984) Optimal inspection when the system is repaired upon detection of failure. Microelectronics and Reliability, 27, 447-450.
3. Aven, T. (1985) A theorem for determining the compensator of a counting process. Scand. J. Statist. 12, 69-72. *
4. Aven, T. (1985) Determination/estimation of an optimal replacement interval under minimal repair. Optimization. 16, 743-754.
5. Aven, T. (1985) Reliability evaluation of multistate systems of multistate components. IEEE Trans. Reliability. 34, 473-479.
6. Aven, T. (1985) Upper (lower) bounds on the mean of the maximum (minimum) of a number of random variables. J. Appl. Prob. 22, 723-728. *
7. Aven, T. (1985) Reliability/availability evaluation of coherent systems based on minimal cut sets. Reliability Engineering. 13, 93-104. *
8. Aven, T. (1986) Formulae for the average unavailability (MFDT) of a coherent system with periodically tested components. Microelectronics and Reliability. 26, 283-288.
9. Aven, T. and B. Bergman (1986) Optimal replacement times - a general set-up. J. Appl. Prob. 23, 432-442. *
10. Aven, T. (1986) On the computation of certain measures of importance of system components. Microelectronics and Reliability, 26, 279-281.
11. Aven, T. and R. Østebø (1986) Two new component importance measures for a flow network system. Reliability Engineering. 14, 75-80. *
12. Aven, T. (1986) A Bayesian inference in a parametric counting process model. Scand. J. of Statistics. 13, 87-97. *
13. Aven, T. (1987) Availability evaluation of oil/gas production and transportation systems. Reliability Engineering. 18, 35-44. *
14. Aven, T. (1987) A counting process approach to replacement models. Optimization. 18, 285-296.
15. Aven, T. and S. Gaarder (1987) Optimal replacement in a shock model; discrete time. J. Appl. Prob.24, 281-287. *
16. Aven, T. (1987) Optimal inspection and replacement of a coherent system. Microelectronics and Reliability, 27, 447-450.
17. Aven, T. (1988) Some considerations on reliability theory and its applications. Reliability Engineering and System Safety. 21, 214-223. *
18. Aven, T. and Myhre, H. (1988) a rating model for loss of profits insurance. Scand. Actuarial J., 129-137.
19. Aven, T. (1989) Availability evaluation of flow networks with varying throughput-demand and deferred repairs. IEEE Trans. Reliability. 38, 499-505, 1989.
20. Aven, T. (1989) Some tests for comparing reliability growth/deterioration rates of repairable systems. IEEE Trans. Reliability, 38, 440-443.
21. Aven, T. and Grundt, H.J. (1989) On the treatment of catastrophic events in availability assessments. IEEE Trans. Reliability, 38, 499-505.
22. Aven, T. and Torgård, H. (1989) Evaluation of the lifetime, reliability and capacity of a large mature subsea gas pipeline system. Oil and Gas J. 71.
23. Aven, T. (1990) Availability formulae for standby systems of similar units that are preventively maintained. IEEE Trans. Reliability. 39, 603-606.

24. Aven, T. (1993) On performance measures for multistate monotone systems. Reliability Engineering and System Safety, 41, 259-266. *
25. Aven, T. (1994) On safety management in the petroleum activities on the Norwegian Continental Shelf. *Reliability Engineering and System Safety.* *
26. Aven, T. (1996) Condition based replacement times - a counting process approach. *Reliability Engineering and system Safety, Special Issue on Maintenance and Reliability*, 51, 275-282. *
27. Aven, T. and Opdal, K. (1996) On the steady state unavailability of standby systems. *Reliability Engineering and System Safety*, 52, 171-176. *
28. Haukås, H. and Aven, T. (1996) A general formula for the downtime distribution of a parallel system. *J. Appl. Prob*., 33, 772-775. *
29. Haukås, H. and Aven, T. (1996) Formulae for the downtime distribution of a monotone system observed in a time interval. *Reliability Engineering and System Safety*. 52, 19-26. *
30. Aven, T. and Dekker, U. (1997) A useful framework for optimal replacement models. *Reliability Engineering and System Safety*, 58, 61-67. *
31. Aven, T. og Haukås, H. (1997) Asymptotic Poisson distribution for the number of system failures of a monotone system. *Reliability Engineering and System Safety*. 58, 43-54. *
32. Aven, T. and Jensen, U. (1997) Asymptotic distribution for the downtime of a monotone systems. *ZOR, Mathematical Methods of Operations Research, Special issue on stochastic models in reliability*. 45, 355-376.
33. Aven, T. and K. Porn, Expressing and interpreting the results of quantitative risk analyses. *Reliability Engineering & System Safety*. 61, 3-10, 1998. *
34. Aven, T. and Pitblado, R. (1998) On risk assessement in the petroleum activities on the Norwegian and UK continental shelves. Rel. Engineering & System Safety. 61, 21-30. *
35. Aven, T. and Rettedal, W., (1998) Bayesian frameworks for integrating QRA and SRA. Structural Safety, 20, 155-165. *
36. Nilsen, T., Gudmestad, O.T., Dalane, J.I., Rettedal, W. and Aven, T. (1998) Utilization of principles from structural reliability in quantitative risk analysis. *Reliability Engineering & System Safety.* 61, 127-138. *
37. Aven, T. og Haukås, H. (1998) A note on the steady state downtime distribution of a monotone system. *Reliability Engineering and System Safety*. 59,269-276. *
38. Sandve, K. and Aven, T. (1999) Cost optimal replacement of a monotone, repairable system. *European Journal of Operational Research*. 116, 235-248. *
39. Gåsemyr, J. and Aven, T. (1999) Asymptotic distributions for downtimes of monotone systems. *Journal of Applied Probability*, 36,814-824, 1999. *
40. Aven, T. and Sandve, K. (1999) A note on how we should express and interpret the results of stochastic maintenance optimization models. J. of quality in Maintenance Engineering. 5, 141-146.
41. Apeland, S. og Aven, T. (2000) Risk based maintenance optimization, foundational issues". *Reliability Engineering and System Safety*, 67, 285-292. *
42. Aven, T. and Jensen, U. (2000) A general minimal repair model. *J. Appl. Prob*, 37, 187-197. *
43. Rettedal, W., Aven, T. and Gudmestad, O. (2000) Integrating QRA and SRA within a Bayesian framework when calculating risk in marine operations. *Journal of Offshore Mechanics and Artics Engineering.* 122, 181-187. *
44. Aven, T. and J.T.Kvaløy (2002) Implementing the Bayesian paradigm in risk analysis. Reliability Engineering and System Safety, 78, 195-201. *
45. Apeland, S., Aven, T. Nilsen, T. (2002) Quantifying uncertainty under a predictive, epistemic approach to risk analysis. *Reliability Engineering and System Safety*. 75, 93-102. *
46. Nilsen, T. and Aven, T. (2003) Models and model uncertainty in the context of risk analysis. *Reliability Engineering & Systems Safety* 79, 309-317. *
47. Aven, T. and Hjorteland, A. (2003) A predictive Bayesian approach to multistate reliability analysis. International Journal of Reliability, quality and Safety Engr. Special issue on multistate system reliability. 10, 221-234.
48. Aven, T. and Kørte, J. (2003) On the use of cost/benefit analyses and expected utility theory to support decision-making. Reliability Engineering and System Safety, 79, 289-299. *

49. Asche, F. and Aven, T. (2004) On the economic value of safety. Risk Decision and Policy, 9, 253-267.
50. Aven, T., Nilsen, E. and Nilsen, T. (2004) Economic risk – review and presentation of a unifying approach. *Risk Analysis*, 24, 989-1006. *
51. Aven, T. (2004) How to approach risk and uncertainty to support decision making. Risk Management: an International Journal, 6, 27-39.
52. Aven, T. (2004) Risk analysis and science. Int. J. of Reliabiliy, Quality and Safety Engineering. 11, 1-15.
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