Brief Biography

Tony Veale is a computer scientist whose principal research topic is Computational Creativity. Veale teaches Computer Science at University College Dublin (UCD), at Fudan University, Shanghai (as part of UCD's international BSc. in Software Engineering, which Veale helped establish in 2002) and at the Korean Advanced Institute of Science and Technology (KAIST), as an NRF-funded visiting professor in Web Science. Veale's work on Computational Creativity focuses on creative linguistic phenomena such as metaphor, simile, analogy and irony (media coverage of this on Afflatus.UCD.ie). He leads the European research can be found Commission's coordination action on Computational Creativity called PROSECCO – Promoting the Scientific Exploration of Computational Creativity – which aims to develop the CC field into a mature discipline. He is author of the 2012 monograph Exploding the Creativity Myth: The Computational Foundations of Linguistic Creativity and is principal co-editor of the multidisciplinary volume from de Gruyter titled Creativity and the Agile Mind. He was recently funded by the Korean World Class University (WCU) programme to study the convergence of Computatuonal Creativity and Web Science at KAIST in Korea.

Research Vision: The Creative Web

As a field, Computational Creativity (CC) is not distinguished by its special algorithms or unique representations, but by its ambitious goals (human-level creativity) and distinctive philosophy (e.g. CC systems must self-evaluate and transcend *mere generation*). I believe the Web can be a force magnifier for research and real engineering progress in CC, if CC is re-imagined as an open architecture of Web services that provide computational creativity, on demand, to any Web-aware 3rd-party applications that ask for it. My research focuses on the development and realization of this vision of a *Creative Web*.

- Current Position: Senior Lecturer in the School of Computer Science, University College Dublin (UCD)
 - **Education**: **PhD** in Computer Science, with application to Natural Language Processing, Metaphor, and Analogical Reasoning, from Trinity College, Dublin University (1996).

MSc (by research and dissertation) from University College Cork, Ireland in Natural Language Processing (graduated 1990).

BSc in the field of Computer Science, from University College Cork

Experience

- **Overview**: My career to date has been wholly focused on research, both in academia and industry. While passionate about understanding the abstract underpinnings of my field, my involvement with industry has served to simultaneously ground my research interests in the realms of the practical and the commercially viable. In my capacity as Chief Scientist at Coreintellect I was responsible for every software component that exhibited intelligent behaviour, from document filtering to document retrieval to natural language question-answering. I continue to occasionally serve as a technology consultant to the commercial sector, while using my academic post to focus on creative aspects of language use.
- **1990 1995 Developer of intelligent language technology for** *Hitachi* **in its Irish research laboratory HDL in Dublin, Ireland. This involved the development of intelligent text-management systems to perform automatic content extraction and concept-based indexing of hypertext documents. I also developed experimental machine translation systems for Hitachi that combined both symbolic and statistical reasoning techniques. One such**

project involved the translation of English into American and Japanese Sign Language (for a graphical ATM application requested by a Japanese bank), while another concerned the translation of software manuals from English to German (using statistical techniques and bilingual corpora). I was the technical lead of Natural Language Processing group in the Dublin laboratory from 1993 to1995.

1995 - 1999 Lecturer in the School of Computer Applications at DCU (Dublin City University). In this capacity I designed, developed and taught courses on Artificial Intelligence, Object-Oriented Programming, Natural Language Processing, Intelligent Pattern Matching, Game Theory, Java, Lisp and Prolog (my speciality teaching topic was AI through Java). I also served as primary supervisor to a number of graduate students in AI and NLP, at both MS and PhD level, and have significant mentoring experience in this regard. During this period I continued an extensive research programme into the computational modelling of metaphor, analogy and conceptual integration (see publication list below).

1999 – 2000 NLP Technical Team Lead, *Cycorp, inc.* Austin Texas

Returning to commerical R&D, I lead a group of three other AI developers/computational linguists, two of which were PhDs, on an advanced natural language processing project, in which the Cyc knowledge-base was integrated with the linguistic theory HPSG.

In my time at this company I rapid-prototyped a variety of efficient LISP solutions for NLP in Cyc, from a fast HPSG parser that exploited the contents of the Cyc knowledge-base, to a robust dialogue system that allows users to enter knowledge into Cyc using conversational English. I was also responsible for using research paradigms from my academic research to develop scaleable lexical-semantic theories that leveraged the contents of the Cyc system. I was the principal researcher in the development of a novel graph-matching analogical reasoner for Cyc, which was used successfully in the final evaluations of the defence department's HPKB (*High-Performance Knowledge-Bases*) project. This work drew heavily on the research ideas and theoretical results reported in my 1995 PhD thesis and subsequent publications on analogy and computation.

2000 – 2001 Chief Scientist at *COREintellect*, Dallas, Texas

As head of core technologies for COREintellect, I coordinated the development of enterprise software for intelligent content filtering and delivery in Dallas, Texas. In this capacity I manage the Core Technologies group – essentially the research development arm of COREintellect – giving me management responsibility for the research development activities of the company. Currently, these responsibilities concern the development of natural language tools for extracting key information from business texts, for filtering large quantities of incoming documents against a large database of user profiles (complex IR queries defined relative to a Bayesian retrieval

model), and for seeking specific answers to natural language business questions (e.g., "*How much did Peoplesoft pay for Vantive?*"). I have been responsible for the conceptualisation, architectural design, development and patenting of these systems. and co-ordinated the research efforts of a team of computational linguists, information retrieval specialists, Java developers and library scientists to construct the necessary knowledge-based components for these tools.

2000 – 2002 Consultant on Intelligent Systems at Intelliseek, Cincinnati Following the acquisition of Coreintellect by Intelliseek inc. of Cincinnati, Ohio, I served as an AI consultant for Intelliseek in the realm of intelligent content management AI search technologies.

2002 – 2014 Lecturer and Senior Lecturer, *University College Dublin*

I currently occupy a senior lectureship in the School of Computer Science at University College Dublin. I teach on the UCD/Fudan joint international BSc in Software Engineering delivered at Fudan University, Shanghai; I co-designed the curriculum for this degree and served as its academic coordinator from 2002-2007.

2008 Visiting fellow, *Flemish Academy of Arts and Sciences, Brussels* In 2008 I was funded by VLAC, the Flemish academy of arts and sciences, to spend 6 months at the academy in Brussels to conduct multidisciplinary research in creativity at the nexus of computer science, art and cognition. This research was documented in an edited volume from Mouton entitled *Creativity and the Agile Mind*.

2011 – 2013 Visiting Professor, *Korean Advanced Inst. Science & Tech* I was funded by the Korean government's *World-Class-University* (WCU) programme to serve as a visiting professor (for one semester in each of

programme to serve as a visiting professor (for one semester in each of 2011, 2012 and 2013) in the emerging discipline of Web Science at KAIST in Daejeon, the *Korean Advanced Institute of Science and Technology*. My remit was to contribute to the development of Web Science as a research discipline in KAIST.

Teaching:I have designed and delivered a diverse range of courses over the past two
decades, to both undergraduates and graduates, in Ireland, China and Korea.
I have taught a variety of CS courses, from OOP to AI to Formal Syntax to
Software Engineering to Ontologies and the Semantic Web, and have
created speciality courses when needed, such as *Philosophy & Practice of*
Science in Fudan, Shanghai and *Linguistic Web Science* in KAIST. In 2002
I designed the curriculum for UCD's International BSc in Software
Engineering, which is a dual UCD/Fudan programme delivered in Shanghai.
I have also delivered a range of intensive 1-week courses to industry
professionals, and taught at a variety of summer and autumn schools.

- Supervision: I have graduated a range of PhD and Msc students in the area of AI and knowledge-based systems, and regularly supervise students on UCD's *Advanced Software Engineering* Taught Masters degree.
- **Peer Review**: I serve on the editorial board of the journal *English Text Construction*. I also serve on the program committees for a variety of international conferences and workshops. The following is a representative list of recent events for which I have served on the PC:
 - *ACL 2013 (Multiple area tracks; served also as student mentor)*
 - *ICCC 2013 (and general chair)*
 - EMNLP 2013; EMNLP-CoNLL-2012 (Sentiment Analysis track)
 - *WWW-2012 (demonstration systems track)*
 - WWW-2012 (Information Extraction track)
 - ECAI-2012 workshop on Computational Creativity, Concept Invention, and General Intelligence
 - *SEM conference (multiword expressions track)
 - IBERAMIA 2012
 - EACL 2012 (Question Answering and Information Retrieval track)
 - EACL 2012 (Sentiment Analysis track)
 - LREC 2012
 - ACL 2012 (Lexicon and Ontology track)
 - ACL 2012 (Lexical Semantics track)
 - ICCC 2012 (and local chair)
 - IJCNLP 2011 (Semantics Track)
 - IJCNLP 2011 (Sentiment Analysis, Opinion Mining track)
 - EuroCogSci 2011
 - ACL-HLT 2011 (Linguistic Creativity track)
 - ACL-HLT 2011 (Sentiment Analysis/Text Classification track)
 - MWE 2011
 - ICCC 2011
 - SMUC 2011
 - ICCC 2010
 - SEM-EVAL 2010
 - ACL 2010 (Sentiment Analysis and Opinion Mining track)
 - MWE 2010
 - ACL-IJCNLP 2009

I frequently review for journals on topics related to natural language processing and/or creativity, such as the following:

- Journal of Language Resources and Evaluation
- Journal of Natural Language Engineering
- Journal of Creativity and Innovation Management
- ACM Transactions on Speech and Language Processing
- Journal of Information Processing & Management
- Transactions on Asian Language Information Processing
- Journal of English Text Construction
- Transactions on Computational Intelligence and AI in Games

Project Reviewing: I am a reviewer for the European Science Foundation (ESF), the Qatar National Research Fund, and a proposal & project reviewer for the European Commission in the areas of *Technology-Enhanced Learning* and *Cultural Heritage*.

Invited Keynotes at Conferences, Workshops and Symposia:

- 2014 Keynote speaker at the 2014 DCC conference (The 6th International Conference on Design, Computing and Cognition), London (Jun. 23-25)
 2014 Invited speaker at the 2014 **PaAM** conference (Researching and Cognition)
- 2014 Invited speaker at the 2014 **RaAM** conference (Researching and Applying Metaphor) in Cagliari, Italy (Jun. 20–23).
- 2013 Invited lecturer at the 2013 Autumn School on Computational Creativity in Porvoo, Helsinki (Nov. 18—22).
- 2013 Invited keynote speaker at ACM Web Science workshop on Creativity and Attention in the Age of the Web (May 1st, 2013)
- 2011 Invited keynote speaker at ILIKS 2011 in Toulouse, France.
- 2011 Invited lecturer at the Autumn School on Computational Creativity in Helsinki, Finland (Nov 7-11).
- 2011 Invited speaker at the Norwegian WordNet Symposium in Oslo, Norway.
- 2011 Invited speaker at workshop on Natural Language Metaphysics (NLM), Trinity College, Dublin.
- 2010 Keynote speaker at the 2010 International Conference on Cognition, Experience and Creativity, in Gujarat, India.
- 2010 Keynote speaker at the 2010 FIRE workshop (*Forum for Information Retrieval Evaluation*) in Gandhinigar, India.

2009	Keynote speaker at the DanNet (Danish WordNet) symposium in Copenhagen, Denmark.
2009	Keynote speaker at the 2009 ICON conference in Hyderabad, India.
2008	Invited speaker at symposium on <i>Artificial Intelligence and Creativity</i> organized by CognAC, the study association of Artificial Intelligence in Nijmegen, The Netherlands.
2008	Keynote speaker at speaker at the 6 th International Conference of the Spanish Cognitive Linguistics Association (SCOLA).
2007	Invited speaker at the ontology session for IBERSID 2007 in Zaragoza, Spain.
2004	Invited speaker at the ESF-sponsored conference on <i>Metaphor and Mind</i> in Granada, Spain.

In addition I am frequently invited to speak at departmental seminars in Europe and Asia. Invited seminars in 2013 include talks at the University of Antwerp, the American University of Paris, and Institute Jozef Stefan in Ljubjlana.

Conference/Workshop Organization:

I will co-deliver a tutorial on *Computational Treatments of Metaphor* at EACL-2014.

I was a co-organizer of the SEMEVAL 2013 task on Noun-Compound Interpretation, and a co-organizer of the same SEMEVAL task/event at ACL 2010, in Uppsala, Sweden. I am a co-proposer of a SEMEVAL task on sentiment analysis on metaphor/irony-rich microtexts for SEMEVAL 2015.

I organized an international symposium on *Computational Creativity as a Web-Service* at KAIST, Korea on Dec 3rd/4th 2012. A special issue of the journal *Computational Intelligence* is planned for the resulting papers.

I was local chair of the 2012 ICCC event in Dublin. ICCC is the annual *International Conference on Computational Creativity*, organized by the Association for Computational Creativity (ACC) of which I am a founder member. I was general chair of the 2013 ICCC event in Sydney, Australia.

I am a member of the steering committee for the series of International Joint Conference on Computational Creativity (ICCC) conferences and workshops, which are held yearly.

I co-organized an international contact forum on creativity entitled *The Agile Mind* at the Flemish Academy of Arts and Sciences in Brussels, 2008.

I was co-chair of the 2008 ICCC event in Madrid, as well as the 2005 ICCC event in Edinburgh.

In 2007 I co-organized a special theme session on the cognitive science of humour at the International Cognitive Linguistics Conference in Krakow; this was a sequel to another session co-organized by myself, Kurt Feyaerts and Geert Brone at Cognitive Linguistics in Spain in 2003.

In 2004, I co-organized a workshop on *Language Resources for Linguistic Creativity* as part of LREC 2004 in Lisbon.

In 1997 I organised an international conference entitled *Computational Models* of *Creativity*, one of the first of its kind, at Dublin City University.

Memberships: I am a member of AAAI (Association for the Advancement of Artificial Intelligence), ACL (Association for Computational Linguistics) and GWA (Global WordNet Association). I am a founder member of the new Association for Computational Creativity (ACC).

Academic Organization:

I served as external examiner for the Dublin City University degree *Applied Computational Linguistics* programme from 2005 – 2007.

I served as academic coordinator for the UCD/Fudan *International BSc in Software Engineering* in Fudan university from 2002 – 2007.

I am an international reviewer for the Portuguese ICT polytechnic degrees (selected study cycles, 2013)

Intensive Research Courses delivered (international):

1-week course on the Computational Treatment of Metaphor at the ESSLLI (*European Summer School on Logic, Language and Information*) Summer School in Edinburgh.

1-week course on *Enriched Lexical Ontologies* at the 2007 ESSLLI (*European Summer School on Logic, Language and Information*) in Trinity College, Dublin.

Intensive course on metaphor and ontologies at the *Korean Advanced Institute of Science and Technology* (KAIST).

Invited 1-week lecture series on Linguistic Creativity at the 1st Autumn School for Computational Creativity in Helsinki, Finland.

Invited 1-week lecture series at the 2nd International *Autumn School for Computational Creativity* in Helsinki, Finland in Nov. 2013.

Consultancy / Advisory Roles:

I occasionally serve as a consultant on creative language-technology for various start-up companies, such as the Montreal company *Xtranormal*.

I am an advisor to the government-funded LEXICOM project in Spain (The development of a dictionary of lexical and constructional templates, for use in communication theory, discourse analysis, and linguistic engineering).

International Research Connections:

In 2008 I was a senior visiting fellow at VLAC, the Flemish Academy of Science and the Arts in Brussels, Belgium, where I conduct research into creative language with collaborators Kurt Feyaerts (of Leuven) and Charles Forceville (of Amsterdam).

I was a member of the EU COST Action 282 on Knowledge Discovery in Science (2003 – 2004).

My research connections with the Korean Advanced Institute of Science and Technology (KAIST) means that I regularly conduct extensive research visits to KAIST, where I have given extensive research lectures.

I have strong research ties to the Creative Systems Laboratory at the university of Coimbra in Portugal (managed by Amilcar Cardoso), and frequently conduct research visits there (e.g., 2004, 2005). These visits have been funded by an Enterprise Ireland.

I have strong ties to the CHIL unit (Creativity, Humour, Imagery and Language) at Leuven University in Belgium, (directed by Prof. Kurt Feyaerts).

Intellectual Property / Patents:

I have contributed to the creation of patentable technology in Hitachi, and authored a U.S. patent in 2003 covering natural language question answering technology for Coreintellect/Intelliseek:

A multi-layered semiotic mechanism for answering natural language questions using document retrieval combined with information extraction. United States Patent 6,584,470 granted June 23 2003.

Research Funding:

- **2013 2016**: Scientific partner/PI in the FP7 Objective 8.1c project *WHIM* (the *What-If Machine*), a computational creativity project (Strep) which will investigate AI approaches to creative ideation.
- **2008 2016**: Principle Investigator funding for *Science-Foundation-Ireland* project *Next Generation Localization. (433,000 euros)* This project, and my funding, has now been renewed for another 4 years (to **2016**).
- 2013 2015: Scientific coordinator of the European Commission's PROSECCO coordination action (*Promoting the Scientific Exploration of Computational Creativity*) (850,000 euros).
- 2011 2014: Sponsored by the National Research Foundation (NRF) of Korea to be visiting professor in Web Science and Technology at KAIST (the Korean Advanced Institute of Science and Technology).
- 2008 2008 (Feb Sept): Senior visiting fellow at the Flemish academy of Science and the Arts. (18,000 euros)
- **2007 2008**: Year 2 follow-on to Korean IT-LIFE project, concerning the development of a comprehensive ontology of IT devices, their functions and their cognitive effects on user lifestyles (40,000 euros)
- **2006 2007**: KAIST project IT-LIFE, concerning the development of a comprehensive ontology of IT devices, their functions and their cognitive effects on user lifestyles (40,000 euros)
- 2004 2007: Enterprise Ireland Commercialization Funding for *KNOW-BEST: Knowledge-Based Entertainment and Scholastic Testing*, and ambitious project that concerns the automated generation of novel challenging test content for scholastic and games applications (350,000 euros).
- **2003:** Travel Funding awarded by the Enterprise Ireland International Collaboration Fund (6,400 euros),
- **2002 2004** : Explanation-Based Business Intelligence Systems. Funded by Enterprise Ireland Research Innovation Fund (*126,000 euros*).

Books

My monograph on Computational Creativity, entitled *Exploding the Creativity Myth: The Computational Foundations of Linguistic Creativity*, was released by Bloomsbury/Continuum in 2012.

I am principal co-editor of a multi-contributor volume from Mouton entitled *Creativity and The Agile Mind*, which was published on May 17th, 2013.

I have recently launched a new Web initiative, named *RobotComix* (see <u>http://RobotComix.com</u>) to engage the public on the creative potential of intelligent knowledge-based systems.

Editorial Roles

I serve on the editorial board of the journal English Text Construction.

I am a member of the advisory board of the Mouton book series *Applications of Cognitive Linguistics* (ACL).

I am currently guest-editing a special issue of the journal Computational Intelligence on the theme Creativity as a Web-Service.

In 2010 I co-edited a special issue of the journal *Minds and Machines* on the topic of computational creativity.

In 2006 I co-edited a special issue of the journal New Generation Computing on the topic of computational creativity (*New Generation Computing 24*)

In 2005 I co-edited a special issue of the journal Humor, on the topic of Cognitive Linguistic approaches to humour (*Humor: The International Journal of Humor Research, 19-3*)

Publications

Google Scholar: <u>http://scholar.google.com/citations?hl=en&user=i8nJh5YAAAAJ</u>

2014

Veale, T. (2014). Readymades and Creative Reuse. *Transactions of the SDPS: Journal of Integrated Design and Process Science* (in press).

2013

Veale, T. (2013). Strategies and tactics for ironic subversion. *In: Dynel, M. (Ed.), Developments in Linguistic Humour Theory*. John Benjamins publishing company.

Veale, T. (2013). A Service-Oriented Architecture for Computational Creativity. *Journal of Computing Science and Engineering*, **7**(3):159-167.

Reyes, A., Rosso, P. and Veale, T. (2013). A multidimensional approach for detecting irony in twitter. *Language Resources and Evaluation* **47**:239--268.

Veale, T. (2013). Humorous Similes. *HUMOR: The International Journal of Humor Research*, **21**(1):3–22.

Veale, T. and Li, G. (2013). Creating Similarity: Lateral Thinking for Vertical Similarity Judgments. *In Proceedings of ACL 2013, the 51st Annual Meeting of the Association for Computational Linguistics, Sofia, Bulgaria, August 2013.*

Veale, T. (2013). The Agile Cliché: Using Flexible Stereotypes as Building Blocks in the Construction of an Affective Lexicon. In Oltramari, A., Vossen, P., Qin, L. and Hovy, E. (eds.), *New Trends of Research in Ontologies and Lexical Resources*, Berlin:Springer, 257-275.

Veale, T., Feyaerts, K. and Forceville, C. (2013). Creativity and the Agile Mind. In Veale, T., Feyaerts, K. and Forceville, C. (Eds.), *Creativity and the Agile Mind: A Multi-Disciplinary Study of a Multi-Faceted Phenomenon*. Walter de Gruyter, 13-33.

Veale, T., Feyaerts, K. and Forceville, C. (2013). E Unis Pluribum: Using Mental Agility to Achieve Creative Duality in Word, Image and Sound. In Veale, T., Feyaerts, K. and Forceville, C. (Eds.), *Creativity and the Agile Mind: A Multi-Disciplinary Study of a Multi-Faceted Phenomenon*. Walter de Gruyter, 35-54.

Veale, T. and Hao, Y. (2013). Talking Points in Linguistic Creativity. In Veale, T., Feyaerts, K. and Forceville, C. (Eds.), *Creativity and the Agile Mind: A Multi-Disciplinary Study of a Multi-Faceted Phenomenon*. Walter de Gruyter, 97-112.

Veale, T. (2013), Creativity as a Web Service: A Vision of Human and Computer Creativity in the Web Era. In Stojanov, G. and Indhurkya, B. (eds.), Proceedings of the AAAI Spring Symposium on Creativity and (Early) Cognitive Development: A Perspective from Artiicial Creativity, Developmental AI and Robotics. Stanford, CA. **Veale, T.** (2013). Less Rhyme, More Reason: Knowledge-based Poetry Generation with Feeling, Insight and Wit. *In Proceedings of ICCC 2013, the 4th International Conference on Computational Creativity. Sydney, Australia, June 2013.*

Veale, T. (2013). Once More, With Feeling! Using Creative Affective Metaphors to Express Information Needs. *In Proceedings of ICCC 2013, the 4th International Conference on Computational Creativity. Sydney, Australia, June 2013.*

2012

Veale, T. (2012). Exploding the Creativity Myth: The Computational Foundations of Linguistic Creativity. *London: Bloomsbury Academic.*

Veale, T. (2012). A Context-sensitive, Multi-faceted model of Lexico-Conceptual Affect. In *Proc. of ACL'2012, the 50th Annual Conference of the Association for Computational Linguistics*, Jeju, South Korea.

Veale, T. (2012). Specifying Viewpoint and Information Need with Affective Metaphors: A System Demonstration of Metaphor Magnet. In *Proc. of ACL'2012, the 50th Annual Conference of the Association for Computational Linguistics, Jeju, South Korea.*

Veale, T. (2012). A Computational Exploration of Creative Similes. *In:* MacArthur, Fiona, Jose Luis Oncins-Martinez, Manuel Sanchez-Garcia and Ana Maria Piquer-Piriz (eds.) *Metaphor in Use: Context, culture, and communication, pp. 329-344.* John Benjamins company.

Veale, T. (2012). Teaching WordNet to Sing like an Angel and Cry like a Baby: Learning Affective Stereotypical Behaviors from the Web. *In Proc. of GWC'2012, the Global WordNet Conference,* Japan.

Veale, T. (2012). Seeing the Best and Worst of Everything on the Web with a Twolevel, Feature-rich Affect Lexicon. In *Proc. of WWW'2012, the World-Wide-Web conference*, Lyon.

Veale, T. and Hao, Y. (2012). In the Mood for Affective Search. In *Proc. of WWW'2012, the World-Wide-Web conference,* Lyon.

Veale, T. (2012). Detecting and Generating Ironic Comparisons: An Application of Creative Information Retrieval. *AAAI Fall Symposium Series 2012, Artificial Intelligence of Humor.* Arlington, Virginia.

Veale, T. (2012). The Soul of a New Cliche: Conventions and Meta-Conventions in the Creative Linguistic Variation of Familiar Forms. In *Proc. of Turing-100, the Alan Turing Centenary Conference*, Manchester, UK.

Veale, T. (2012). From Conceptual Mash-ups to "Bad-Ass" Blends: A Robust Computational Model of Conceptual Blending. *In the Proc. of ICCC 2012, the 3rd International Conference on Computational Creativity*. Dublin, Ireland.

Veale, T. (2012). Full-FACE Poetry Generation. *In Proc. of ICCC 2012, the 3rd International Conference on Computational Creativity*. Dublin, Ireland.

2011

Veale, T. (2011). Creative Language Retrieval: A Robust Hybrid of Information Retrieval and Linguistic Creativity. In *Proc. of the ACL'2011, the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies.*

Veale, T. and Hao, Y. (2011). Exploiting Readymades in Linguistic Creativity: A System Demonstration of the Jigsaw Bard. In *Proc. of the ACL'2011, the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies.*

Veale, T. and Li, G. (2011). Creative Introspection and Knowledge Acquisition: Learning about the world thru introspective questions and exploratory metaphors. In *Proc. of AAAI'2011, the 25th Conf. of the Association for Advancement of Artificial Intelligence.*

Veale, T. (2011). We Can Re-Use It For You Wholesale Serendipity and Objets Trouvés in Linguistic Creativity. In *Proc. of ICCC'2012, the 2nd International Conference on Computational Creativity*.

Howell, S. and Veale, T. (2011). Serious Linguistic Games as Intelligent Tutoring Systems. In Felica, P. (Ed.), *Handbook of Research on Improving Learning and Motivation through Educational Games: Multidisciplinary Approaches*. Hershey, PA: IGI Global, 726:758.

Veale, T. and Li, G. (2011). Analogical Cliques in Ontology Construction. In Fred, A., Dietz, J.L.G., Liu, K., Filipe, J. (eds.), *Knowledge Discovery, Knowledge Engineering and Knowledge Management. Communications in Computer and Information Science 128*, Berlin:Springer Verlag.

2010

Hao, Y. and Veale, T. (2010). An Ironic Fist in a Velvet Glove: Creative Mis-Representation in the Construction of Ironic Similes. *Minds and Machines*, **20**(4):635–650.

Veale, T. and Hao, Y. (2010). Detecting Ironic Intent in Creative Comparisons. *In Proceedings of ECAI'2010, the 19th European Conference on Artificial Intelligence.* Lisbon, Portugal, August 2008.

Veale, T. and Butnariu, C. (2010). Harvesting and Understanding On-line Neologisms. In *Cognitive Perspectives on Word Formation,* A. Onysko and S. Michel (eds.). 393-416. Mouton De Gruyter.

Forceville, C., Veale, T. and Feyaerts, K. (2010). Balloonics: The Visuals of Balloons in Comics. *The RISE and REASON of Comics and Graphic Literature: Critical Essays on the Form*, Joyce Goggin & Dan Hassler-Forest (Eds). McFarland.

Veale, T. and El Mouddeb, M. (2010). Similarity, Comparability And Analogy In WordNet: Squaring The Analogical Circle With Mondrian. *In Proceedings of the 5th Global WordNet Conference, Bhattacharyya, P., Vossen, P. & Fellbaum, C. (eds.).* Mumbai, India. **Butnariu, C., Kim, S. N., Nakov, P., O'Seaghdha, D., Szpakowicz, S. and Veale, T.** (2010). SemEval-2010 Task 9: The Interpretation of Noun Compounds Using Paraphrasing Verbs and Prepositions. *Proc. of the ACL workshop on Semantic Evaluations (SemEval 2010))*, 39–44.

Li, G., Lopez-Fernandez, A. and Veale, T. (2010). UCD-Goggle: A Hybrid System for Noun Compound Paraphrasing. *In Proc. of the 5th International Workshop on Semantic Evaluation at ACL 2010*, 230–233. Uppsala, Sweden, 15-16 July 2010.

2009

Veale, T., Li, G. and Hao, Y. (2009). Growing Finely-Discriminating Taxonomies from Seeds of Varying Quality and Size. *In Proceedings of EACL 2009, The 12th Conference of the European Chapter of the Association for Computational Linguistics*. Athens, Greece.

Veale, T. and Hao, Y. (2009). Support Structures for Linguistic Creativity: A Computational Analysis of Creative Irony in Similes. *In Proceedings of CogSci 2009, the* 31st Annual Meeting of the Cognitive Science Society. Amsterdam.

Veale, T. (2009). Hiding in Plain Sight: Figure-Ground Reversals in Humour. In *Cognitive Poetics: Goals, Gains and Gaps*, G. Brône and J. Vandaele (eds.), Mouton de Gruyter.

Cardoso, A., Veale, T. and Wiggins, G. (2009) Converging on the divergent: the history (and future) of the international joint workshops in computational creativity. *AI Magazine* **30** (3) :15-22.

Veale, T. and Li, Guofu. (2009). Ontological Cliques: Analogy as an Organizing Principle in Ontology Construction. *In Proceedings of IC3K/KEOD, The International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management*. Madeira, Portugal.

Howell, S. and Veale, T. (2009). Designing serious games with linguistic resources. *In Proceedings of FDG'09, the 4th International Conference on the Foundations of Digital Games*, Florida, USA, pp. 291-298.

2008

Veale, T. and Hao, Y. (2008). A context-sensitive framework for lexical ontologies. *The Knowledge Engineering Review*, volume 23(1), pp 101—115. Cambridge University Press.

Veale, T., Hao, Y. and Li, G. (2008). Multilingual Harvesting of Cross-Cultural Stereotypes. *In proceedings of ACL 2008, the 46th Annual Meeting of the Association of Computational Linguistics*. Ohio, USA.

Veale, T. and Hao, Y. (2008). Talking Points in Metaphor: A concise, usage-based representation for figurative processing. *In Proceedings of ECAI'2008, the 18th European Conference on Artificial Intelligence*. Patras, Greece, July 2008.

Butnariu, C. and Veale, T. (2008). A Concept-Centred Approach to Noun Compound Interpretation. *In Proc. of COLING 2008, The 22nd International Conference on Computational Linguistics*. Manchester.

Veale, T. and Hao, Y. (2008). A Fluid Knowledge Representation for Understanding and Generating Creative Metaphors. *In proceedings of COLING 2008, The 22nd International Conference on Computational Linguistics*. Manchester.

Veale, T. and Hao, Y. (2008). Acquiring Naturalistic Concept Descriptions from the Web. *In proceedings of LREC 2008, the 6th international conference on Language Resources and Evaluation*. Marrakech, Morocco.

Butnariu, C. and Veale, T. (2008). On the categorization of Cause and Effect in WordNet. *In proceedings of GWC 2008, the 4th Global WordNet Conference*. Szeged, Hungary.

Veale, T. and Hao, Y. (2008). Enriching WordNet with Folk Knowledge and Stereotypes. *In proceedings of GWC 2008, the 4th Global WordNet Conference*. Szeged, Hungary.

Veale, T. and Hao, Y. (2008). Slip-Sliding Along in Linguistic Creativity: Building A Fluid Space for Connecting Disparate Ideas. *In Proceedings of the 5th International Joint Workshop on Computational Creativity*, Madrid, Spain.

Veale, T. (2008). Figure-Ground Duality in Humour: A Multi-Modal Perspective. *Lodz Papers in Pragmatics*, **4**(1), pp 63 - 81.

2007

Veale, T. (2007). Dynamic Creation of Analogically-Motivated Terms and Categories in Lexical Ontologies. In Judith Munat (Ed.), *Lexical Creativity, Texts and Contexts (Studies in Functional and Structural Linguistics)*, pp 189-212. Amsterdam: John Benjamins.

Veale, T. and Hao, Y. (2007). Learning to Understand Figurative Language: From Similes to Metaphors to Irony. In proceedings of CogSci 2007, the 29th Annual Meeting of the Cognitive Science Society. Nashville, USA.

Veale, T. and Hao, Y. (2007). Comprehending and Generating Apt Metaphors: A Webdriven, Case-based Approach to Figurative Language. *In proceedings of AAAI 2007, the 22nd AAAI Conference on Artificial Intelligence*. Vancouver, Canada.

Butnariu, C. and Veale, T. (2007). A hybrid model for detecting semantic relations between noun pairs in text. *In the proceeding of SemEval-2007, the 4th International Workshop on Semantic Evaluations, ACL 2007.* Prague, Czech Republic.

Veale, T. and Hao, Y. (2007). Making Lexical Ontologies Functional and Context-Sensitive. *In the proceedings of ACL 2007, the 45th Annual Meeting of the Association of Computational Linguistics*, pp 57–64. Prague, Czech Republic.

2006

Veale, T. (2006). Tracking the Lexical Zeitgeist with Wikipedia and WordNet. *In the proceedings of ECAI'2006, the 17th European Conference on Artificial Intelligence.* Trento, Italy, August 2006.

Veale, T., Gervas, P. and Pease, A. (2006). Understanding Creativity: A Computational Perspective. Introduction to the Special Issue of Computational Creativity, *New Generation Computing* **24**, pp 203-207.

Veale, T. (2006). Re-Representation and Creative Analogy: A Lexico-Semantic Perspective. *New Generation Computing* **24**, pp 223-240.

Veale, T., Feyaerts, K., and Brône G. (2006). The Cognitive Mechanisms of Adversarial Humor. *Humor: The International Journal of Humor Research*, 19-3, pp 305-338.

Veale, T. (2006). An analogy-oriented type hierarchy for linguistic creativity. *Journal of Knowledge-Based Systems, Volume 19, Issue 7*, November 2006, Pages 471-479.

Veale, T. (2006). Computability as a test on linguistic theories. In Cognitive Linguistics: Current Applications and Future Perspectives. G. Kristiansen, M. Achard, R. Dirven and F. Ruiz de Mendoza Ibáñez (eds.). *Applications of Cognitive Linguistics*. The Hague: Mouton de Gruyter.

Costello, F., Veale, T. and Dunne, S. (2006). Using WordNet to Automatically Deduce Relations between Words in Noun-Noun Compounds. *In the Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics.*

Hao, Y. and Veale, T. (2006). Understanding Metaphor Using a Corpus-trained Fluid Category System. *In the proceedings of AICS2006, the 17th Irish conference on Artificial Intelligence and Cognitive Science,* Belfast, Ireland, September 2006.

Yu, Q. and Veale, T. (2006). Creative Puzzle Generation from Factual Content. *In the proceedings of AICS2006, the 17th Irish conference on Artificial Intelligence and Cognitive Science*, Belfast, Ireland, September 2006.

Veale, T. and Chen, S. (2006). Learning to Extract Semantic Content from the Orthographic Structure of Chinese Words. *In the proceedings of AICS2006, the 17th Irish conference on Artificial Intelligence and Cognitive Science*, Belfast, Ireland, September 2006.

Hao,Y and Veale, T. (2006). A Fluid Category Structure for Metaphor Processing. *In Proceedings of the ECAI'2006 workshop on Computational Creativity*. Trento, Italy, August 2006.

Butnariu, C. and Veale, T. (2006). Lexical Combinatorial Creativity with "Gastronaut". *In Proceedings of the ECAI'2006 workshop on Computational Creativity*. Trento, Italy, August 2006.

Yu, Q. and Veale, T. (2006). Creative Puzzle Generation from Factual Content. *In Proceedings of the ECAI'2006 workshop on Computational Creativity. Trento*, Italy, August 2006.

Veale, T. and Chen, S. (2006). Unlocking the Latent Creativity of Orthographic Structure. *In Proceedings of the ECAI'2006 workshop on Computational Creativity*. Trento, Italy, August 2006.

Veale, T. and Hao, Y (2006). Corpus-Driven Contextualized Categorization. *In Proceedings of the ECAI'2006 workshop on Contexts and Ontologies*. Trento, Italy, August 2006.

Veale, T. and Butnariu, C. (2006). Exploring Linguistic Creativity via Predictive Lexicology. *In Proceedings of the ECAI'2006 workshop on Computational Creativity*. Trento, Italy, August 2006.

Veale, T. (2006). A Typology of Lexical Analogy in WordNet. In the proceedings of GWC2006, the 3rd Global WordNet Conference. Cheju, Korea, January 2006.

Kim, H., Chen, S. and Veale, T. (2006). Analogical Reasoning with a Synergy of HowNet and WordNet. In the proceedings of GWC2006, the 3rd Global WordNet Conference. Cheju, Korea, January 2006.

Veale, T. (2006). ZeitGeist: A Computational Model of Neologism Processing. In Proceedings of the Second International Conference of the German Cognitive Linguistics Association. Munich, October, 2006.

2005

Hayes, J., Veale, T. and Seco N. (2005). Creative discovery in the lexical validation gap. *Journal of Computer speech and Language* Volume 19(4):513-523.

Veale, T. (2005). Analogy Generation with HowNet. In the proceedings of IJCAI'2005, the International Joint Conference on Artificial Intelligence.

Veale, T. (2005). Analogy as Functional Re-categorization: Abstraction with HowNet Semantics. *In the proceedings of IJCNLP'2005, the International Joint Conference on Natural Language Processing*. Jesu Island, South Korea.

Veale, T. (2005). Analogy as Functional Re-categorization: A perspective from HowNet. *In the proceedings of the IJCAI'2005 workshop on Creative Systems, held as part of the 2005 International Joint Conference on Artificial Intelligence*, Edinburgh, July 30th, 2005.

2004

Veale, T. (2004). Incongruity in Humor: Root-Cause or Epiphenomenon? The International Journal of Humor 17/4, Festschrift for Victor Raskin.

Veale, T. (2004). WordNet sits the S.A.T.: A Knowledge-based Approach to Lexical Analogy. *In the proceedings of ECAI'2004, the 16th European Conference on Artificial Intelligence. Valencia. John Wiley.*

N. Seco, T. Veale and J. Hayes. (2004). An Intrinsic Information Content Metric for Semantic Similarity in WordNet. *In the proceedings of ECAI'2004, the 16th European Conference on Artificial Intelligence. Valencia, Spain. John Wiley.*

Veale, T., N. Seco and J. Hayes (2004). Creative Discovery in Lexical Ontologies. *In the proceedings of COLING'2004, the 20th International Conference on Computational Linguistics. Geneva, Switzerland. Morgan Kaufmann.*

Veale, T. (2004). Polysemy and Category Structure in WordNet: An Evidential Approach. *In the proceedings of LREC'2004, the 4th international conference on Language Resources and Evaluation*. Lisbon, Portugal.

Veale, T. (2004). Paths to Creativity in Lexical Ontology. *In the proceedings of the 2nd Global WordNet Conference, Brno, Czech Republic*, January 2004.

Veale, T. (2004). Creative Information Retrieval. *In the proceedings of CICLing 2004., ed. Alexander. Gelbukh, Seoul*, February 2004.

J. Hayes, T. Veale and N. Seco. (2004). Enriching WordNet Via Generative Metonymy and Creative Polysemy. *In the proceedings of LREC'2004, the 4th international conference on Language Resources and Evaluation*. Lisbon, Portugal.

J. Hayes, T. Veale and N. Seco (2004). Interpreting noun-noun compounds: exploiting lexical resources to create a truly large-scale model. *In the proceeding of the 1st Workshop on Language Resources for Linguistic Creativity, at the 4th international conference on Language Resources and Evaluation*. Lisbon, Portugal.

N. Seco, T. Veale and J. Hayes. (2004). Concept creation in Lexical Ontologies. *In the proceedings of LREC'2004, the 4th international conference on Language Resources and Evaluation*. Lisbon, Portugal.

N. Seco, T. Veale and J. Hayes. (2004). The Paradoxical Role of Similarity in Creative Reasoning. *In the proceedings of the 1st Workshop on Language Resources for Linguistic Creativity, at the 4th international conference on Language Resources and Evaluation.* Lisbon, Portugal.

2003

Veale, T. (2003). The Analogical Thesaurus: An Emerging Application at the Juncture of Lexical Metaphor and Information Retrieval. *In the proceedings of IAAI 2003, the 2003 International Conference on Innovative Applications of Artificial Intelligence.*

Veale, T. (2003). Dynamic Type Creation in Metaphor Interpretation and Analogical Reasoning: A Case-Study with WordNet. *In the proceedings of ICCS2003, the 2003 International Conference on Conceptual Structures, Dresden, Germany.*

Veale, T. (2003). Systematicity and the Lexicon in Creative Metaphor. *In the Proceedings of the ACL Workshop on Figurative Language and the Lexicon, the 2003 Applied Computational Linguistics Conf, Sapporo.*

Veale, T. (2003). Qualia Extraction from WordNet. In the Proceedings of the 3rd International Workshop on Creative Systems, held as part of IJCAI'03, the 2003 International Joint Conference on AI.

2002

Veale, T. (2002). Meta-Knowledge Annotation for Efficient Natural-Language Question-Answering. *In the proceedings of AICS'2002, the 13th Irish conference on Artificial Intelligence and Cognitive Science. Lecturer Notes in AI, LNAI 2464.* Berlin: Springer. **Veale, T.** (2002). Compromise in Multi-Agent Blends. *In the proceedings of TWWT 2002, The Way We Think*, Anders Hougaard and Steffen Nordahl Lund (eds.). Odense Working Papers in Language and Communication, No. 23, August 2002.

2000

Veale, T. and D. O'Donoghue. (2000). Computation and Blending. *Cognitive Linguistics*, **11**(3/4), pp 253–281.

Keane, M.T, Veale, T. and Costello, F. (2000). *La complessità computazionale nella scienza cognitiva: Il caso del ragionamento analogico e della combinazione di concetti.* In P. Cherubini, P. Giretta, and A. Mazzocco. (Eds.), Ragionamento: psicologia e logica. pp. 185-207. Firenze: Giunti.

1999

Veale, T., O'Donoghue, D. and Keane, M. T. (1999). "Computability as a limiting cognitive constraint: Complexity concerns in metaphor comprehension about which cognitive linguists should be aware", *Cultural, Psychological and Typological Issues in Cognitive Linguistics*, Ed. M. Hiraga, C. Sinha and S. Wilcox. John Benjamins: Amsterdam/Philadelphia, pp 129-155.

Hayes, J. and T. Veale. (1999). *A Structure Mapping Model of Conceptual Combination*. In the proceedings of the 1999 International Cognitive Linguistics Conference, Sweden.

O'Donoghue, D. and T. Veale. (1999). *How to blend concepts and influence people*. In the proceedings of the 1999 International Cognitive Linguistics Conference, Sweden.

1998

Veale, T., A. Conway and B. Collins. (1998). The Challenges of Cross-Modal Translation: English to Sign Language Translation in the Zardoz System. *Machine Translation* 13(1).

Veale, T. (1998). 'Soft' Approaches to Structural Alignment in the Sub-Graph Isomorphism Problem, in the Proc. of *the IASTED International Conference on Soft Computing and Artificial Intelligence*, Cancun, Mexico, May 1998.

Veale, T. (1998). Pragmatic Pressures in Metaphor Appreciation. *Computation for Metaphors, Analogy, and Agents: Lecture Notes in Artificial Intelligence 1562*, Springer Verlag: Berlin.

Veale, T. (1998). 'Just in Time' Analogical Mapping, An Iterative-Deepening Approach to Structure-Mapping, *in the proceedings of ECAI'98*, the Thirteenth European Conference on Artificial Intelligence, Brighton, UK, August 1998.

Veale, T. and M. T. Keane. (1998). Principal Differences in Structure-Mapping, *in the proceedings of Advances in Analogical Research, edited by Keith Holyoak, Dedre Gentner and Boicho Kokinov, 1998.*

1997

Veale, T. and M. T. Keane. (1997). The Competence of Sub-Optimal Structure Mapping on 'Hard' Analogies, *in the proceedings of IJCAI'97, the Int. Joint Conference on Artificial Intelligence,* Nagoya, Japan, 1997.

Veale T. and A. Way. (1997). Gaijin: A Template-Driven Bootstrapping Approach to Example-Based Machine Translation, in *the Proceedings of NeMNLP'97, New Methods in Natural Language Processing*, Sofia, Bulgaria, September 1997.

Veale, T. and M. T. Keane. (1997). A Computational Treatment of Metaphoric Blends with Special Regard to Cinematic "Borrowing". In the Proceedings of *Mind II: Computational Models of Creative Cognition*, Dublin, Ireland, 1997.

1996

Veale, T. and M. T. Keane. (1996). No Laughing Matter: The Cognitive Structure of Humour, Metaphor and Creativity, in *the proceedings of IWCH'96, the First International Workshop on Computational Humor*, eds. J. Hulstijn and A. Nijholt.

Veale, T. and M. T. Keane. (1996). Catastrophes of Goal Activation in the Appreciation of Disparagement Humour, in *the proceedings of IWCH'96, the First International Workshop on Computational Humor*, eds. J. Hulstijn and A. Nijholt.

Veale, T. and B. Collins. (1996). Space, Schematization and Metaphor in Sign: Sign Language Translation in the Zardoz System *in the proceedings of AMTA'96, The second conference of the Association for Machine Translation in the Americas, Montrèal.*

Collins, B., P. Cunningham and T. Veale. (1996). Adaptation Guided Retrieval for Example-Based Machine Translation, *in the proceedings of AMTA'96, The second conference of the Association for Machine Translation in the Americas, Montrèal.*

Collins, B., Cunningham, P. and T. Veale. (1996). *Adaptation-Guided Retrieval in EBMT: A Case-Based Approach to Machine Translation*. In *Proceedings of EWCBR '96, Advances in Case-Based Reasoning*, Ian Smith and Boi Faltings (eds.) Springer Verlag Lecture Notes in AI, pp 91-104.

Veale, T. (1996). A Metaphor-based Model of Conceptual Deep-Cases for Prepositional Attachment, in *the proceedings of CSNLP'96, the 1996 Conference on Cognitive Science of Natural Language Processing*. Dublin City University, Ireland, September 1996.

Veale, T., B. Smyth, D. O'Donoghue and M. T. Keane. (1996). Representational Myopia in Cognitive Mapping, *in the proceedings of the 1996 AAAI workshop on Source of the Power in Cognitive Theories*, Portland, Oregon, August 1996.

1995

Veale, T, D O'Donoghue and M. T. Keane. (1995). Epistemological Issues in Metaphor Comprehension: A Comparative Analysis of Three Models of Metaphor Interpretation, presented at *ICLC'95, the 4th conference of The International Cognitive Linguistics Association*, Albuquerque NM. 1995.

Conway, A. and T. Veale. (1995). Building signs: Representing space and structure in automatic sign synthesis, presented at *ICLC'95, the 1995 conference of The International Cognitive Linguistics Association*, Albuquerque, NM. 1995.

1994

Cunningham P., Smyth B. and Veale T. (1994). On the Limitations of Memory Based Reasoning, in *working papers of Second European Workshop on Case-Based Reasoning*. Chantilly, France, November 1994.

Veale, T. and M. T. Keane. (1994). Belief Modeling, Intentionality and Perlocution in Metaphor Comprehension, in *the Proceedings of the Sixteenth Annual Meeting of the Cognitive Science Society*, Atlanta, Georgia. Hillsdale, NJ: Lawrence Erlbaum.

Veale, T. and M. T. Keane. (1994). Metaphor and Memory and Meaning in Sapper: A Hybrid Model of Metaphor Interpretation, *in the Proceedings of the workshop on Hybrid Connectionist Systems of ECAI'94, the 11th European Conference on Artificial Intelligence*, Chichester: John Wiley.

Veale, T. and A. Conway. (1994). Cross-modal comprehension in Zardoz, an English to Sign Language translation system, presented at *the 7th International Workshop on Natural Language Generation*, Maine, 1994.

Conway, A. and T. Veale. (1994). *A linguistic approach to sign language synthesis*. In *People and Computers IX*. Proceedings of 1994 HCI Conference. P.211-222.

1993

Cunningham, P., T. Veale and A. Conway. (1993). Knowledge Acquisition for Concept Indexing in Document Retrieval. *Journal of Expert Systems for Information Management*, **5**(1):25-41.

Veale, T. and M. T. Keane. (1993). A Connectionist Model of Semantic Memory for Metaphor Interpretation, presented at *the 1993 Workshop on Neural Architectures and Distributed AI*, October 19-20, the Center for Neural Engineering, U.S.C. California.

1992

Veale, T. and M. T. Keane. (1992). Conceptual Scaffolding: A spatially founded meaning representation for metaphor comprehension, *Computational Intelligence* **8**(3): 494-519.

Veale, T. and P. Cunningham. (1992). Competitive Hypothesis Resolution in TWIG: A Blackboard-Driven Text-Understanding System, in *the Proceedings of ECAI'92, the 10th European Conference on Artificial Intelligence*, Chichester: John Wiley.

Veale, T. and M. T. Keane. (1992). Conceptual Scaffolding: Using metaphors to build knowledge structures, in *the Proceedings of ECAI'92, the 10th European Conference on Artificial Intelligence*, Chichester: John Wiley.

1991

Cunningham, P. and T. Veale. (1991). Organizational issues arising from the integration of the Concept Network and Lexicon in a Text Understanding System, *in*

Proceedings of IJCAI'1991, the 12th International Joint Conference on Artificial Intelligence. San Mateo: Morgan Kaufman.

Veale, T., Cunningham, P. (1991). A Conceptual Framework for Semantic Integrity in large Knowledge-based Systems, in *the Proceedings of the 1991 Irish Artificial Intelligence and Cognitive Science conference, AICS'91*. Springer Verlag.