

Science and Language, Content versus Form?



OR HOW THE FRENCH-SPEAKING SCIENTIST FEELS ABOUT LANGUAGE (ENGLISH)

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Science and Language, Content versus Form?



- Engineers and communication
- Professional environment
- Engineering Education in Belgium
- Language needs
- Teachers, translators and scientists
- The best of mistakes

Science and Language, Content versus Form?



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Science and Language, Content versus Form?



- Engineers do not speak, they think!
- Formulaic and symbolic expression
- Non-technical vocabulary of 800 words

Science and Language, Content versus Form?

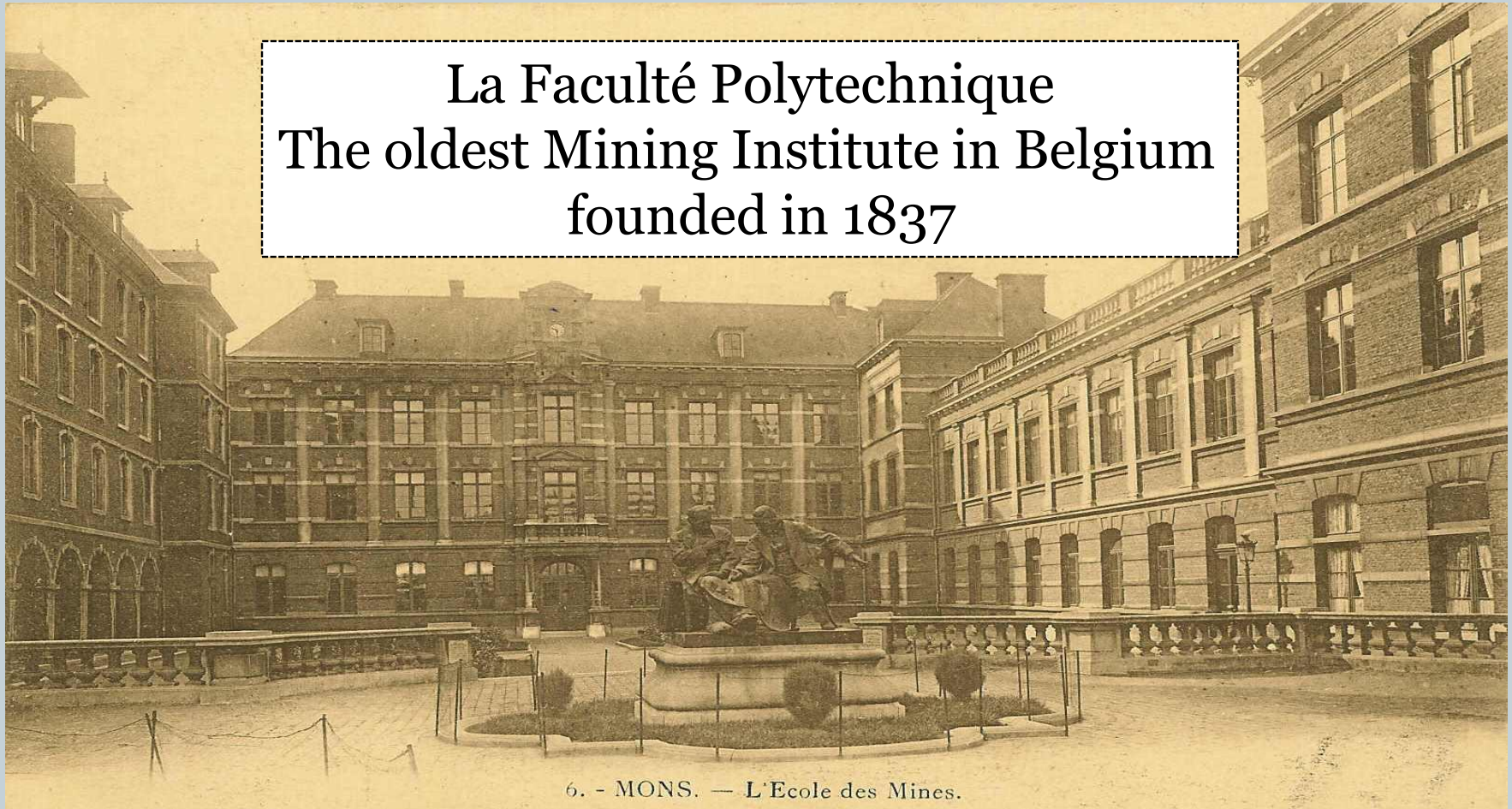


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Science and Language, Content versus Form?

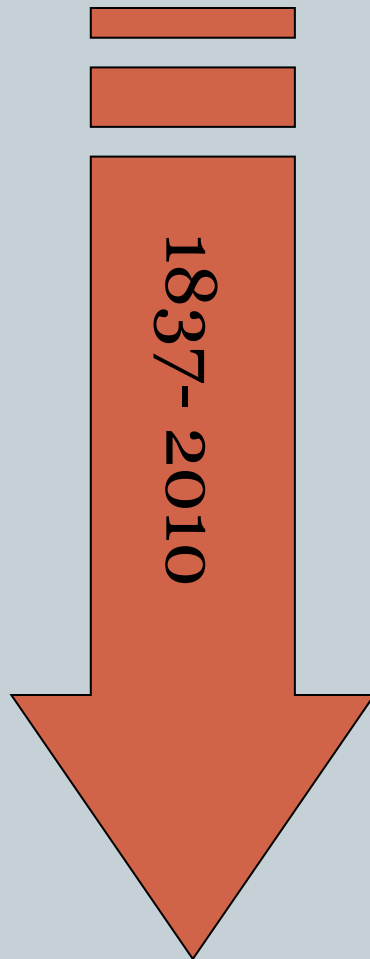


La Faculté Polytechnique The oldest Mining Institute in Belgium founded in 1837



6. - MONS. — L'Ecole des Mines.

Science and Language, Content versus Form?



Technical training

Mining engineering & geology

Mechanical engineering

Electrical engineering

Chemical engineering

Material sciences

Architectural engineering

IT and Management

Science and Language, Content versus Form?



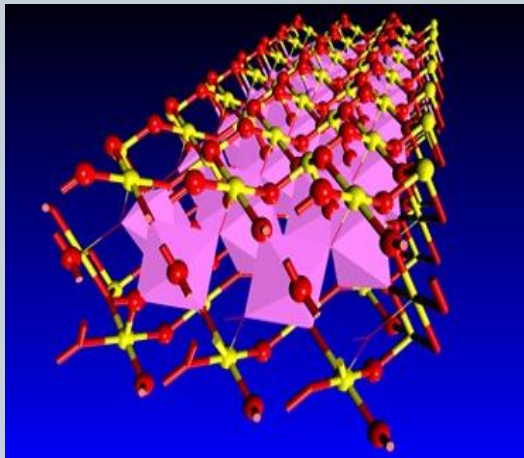
IT



Technological hazards

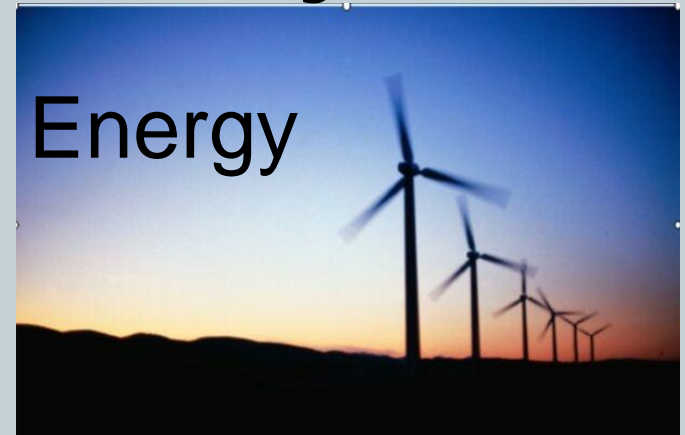


Biosystems and biosignals



Materials

Energy



Science and Language, Content versus Form?



Multimedia systems
Speech technologies
(speech recognition –
text-to-speech)



Science and Language, Content versus Form?



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- **Professional environment**
- **Engineering Education in Belgium**
- Language needs
- Teaching and translating
- Easy-jet and high-tech translation
- Francophones' Common Pitfalls

Science and Language, Content versus Form?



- Versatile and highly-specialized technical training
- Technical versus non-technical training
- Management, communication and languages

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Science and Language, Content versus Form?



**English- Dutch-
Spanish - German**



Science and Language, Content versus Form?



- The scientific discourse = direct and precise
- The internationalization of science
 - ✦ - online editing
 - ✦ - quick access to huge databases
 - ✦ - decrease in quality?

Science and Language, Content versus Form?



- Technical jargon is not a real problem
- Understanding is not a problem
- Oral competence is a serious problem
- Reading is not a problem
- Writing is the biggest problem

Science and Language, Content versus Form?



Is there any problem at all?



Science and Language, Content versus Form?



- In second language acquisition, expressing oneself and writing belong to the most difficult skills to acquire.
- In own language, dramatic decline in quality
- English as a global language

Science and Language, Content versus Form?



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Science and Language, Content versus Form?



- A good teacher is a good translator
- Always translating into English
- Translating is not time-consuming
- Reviewing takes less time than translating
- As long as fellow researchers understand...
- No time for meetings, pair work, consultancy
- No text available in source language

Science and Language, Content versus Form?



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Science and Language, Content versus Form?



- - French-speaking scientists
- - highly-specialized authentic material
- - reviewing (technical editing)
- - very tight schedules
- - processes and experiments
- - complex matter

Science and Language, Content versus Form?



- **1. Grammar and syntax**

- **Present perfect and past simple**

- *Palynological analysis of sedimentary sequences taken from peat bogs in different areas of north-west of Tunisia **revealed** * major climatic events and anthropic impacts on the environment occurring during the last 40 millennia.*
- *Most of the existing work on medical image segmentation **focused** * on magnetic resonance (MR) and computed tomography (CT) images.*

Science and Language, Content versus Form?



Modals

- *As it has been shown that Mercury has a magnetic field, **it must have** an iron core like the Earth.*
- *As it has been shown that Mercury has a magnetic field, **it should have** an iron core like the Earth.*
- *The existence of a stationary layer **might** * be assumed from the fact that, whilst large particles of dust **could** * be blown off a table, small particles remain which can be removed subsequently with the finger.*

Science and Language, Content versus Form?



- *If the thermal and hygroscopic expansion coefficients of the coating (α^T_F and α^H_F) and the substrate (α^T_S and α^H_S) **are** different, which is usually the case, thermal and hygroscopic stresses (S^T and S^H) **will** develop in the coating.*

Science and Language, Content versus Form?



Active/ passive

How **can one prevent** stroke?

It seems that the danger of stroke **cannot be** totally **overcome**, all the more so as it **is** often genetically **linked**.

A global description such as Canny or Deriche filter **is used** * by a large set of contour detection methods.*

A large set of contour detection methods **use** a global description such as Canny or Deriche filter.

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Comparison

*Light travels **a million times so*** fast **as** sound.*

*There are **three times as many** corrosive elements in the coating **than*** before the treatment.*

Neither** method A **or method B is efficient.*

Science and Language, Content versus Form?



- **2.Lexicon**
- False friends

- **-alter**
- *The protein's stability can be **altered** by the introduction of amino acids.*
- **-achieve**
- *Higher speeds **can be achieved** by using fibre optics.*
- **-realize**
- *The experiment **was realized*** by his team.*

Science and Language, Content versus Form?



- Prepositional forms
- **In** the beginning/**at** the beginning
- **For** example
- **To** conclude
- **In** other words
- **On** the whole
- **As** a rule

Science and Language, Content versus Form?



- **3. Style**

Linking ideas

*The synchrotron is a million times more powerful, **consequently** it will enable scientists to study the structure of matter.*

*Aluminium is used **owing to the fact that** it is a light metal.*

*The freon gas is compressed, **and so** the temperature increases.* (**thereby** increasing the temperature)*

Science and Language, Content versus Form?



- **Scientific English as a Foreign Language**

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- **Adjective or adverb?**
- **Access and assess**
- **Accuracy and precision**
- **As, because, since**
- **Lay and lie**

Science and Language, Content versus Form?



- **Prepositions--for sale, on sale**
- **Utilize and use**
- **Some useful Latin words**
- **Verbosity**
- **Hyphenation**
- **Conjuncts**
- **Editing equations**
- **The interview talk**
- **Logical and chronological adverbs**

Science and Language, Content versus Form?



- **Look over, overlook, look it over**
- **Let and leave**
- **Nuances of prepositions**
- **Simple past and present perfect verb tenses**
- **Opportunity and possibility**
- **Premodification of nouns by participles**
- **Premodification of nouns by nouns**
- **Verb groups**
- **Writing mathematics**

Science and Language, Content versus Form?



- **Among and between**
- **Possessives**
- **Get**
- **Actual and eventual**
- **A and an**
- **Collective nouns**
- **Dashes**
- **Colons and semicolons**
- **Commas**

Science and Language, Content versus Form?



- **Submit and subject**
- **That and which**
- **Resonant and resonance**
- **It's & its, who's & whose**
- **Apostrophes**
- **Allow**
- **Prepositions**
- **Say and tell**
- **Remember and remind**

Science and Language, Content versus Form?



- **Improve, ameliorate, better**
- **Much and many**
- **The**
- **Less and fewer**
- **Experience and experiment**
- **Make and do**
- **Elaborate and fabricate**
- **Locate and localize**
- **Around, about, approximately**

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