ALVARO VIDELA - @old_sound

METAPHORS WE COMPUTE BY
THE YEAR IS 1980
METAPHOR ISN'T JUST A MATTER OF POETRY AND RHETORICAL FLOURISH
METAPHORS PERMEATE ALL AREAS OF OUR LIVES

METAPHORS DICTATE

- How we think
METAPHORS PERMEATE ALL AREAS OF OUR LIVES

METAPHORS DICTATE

- How we think
- How we behave
METAPHORS PERMEATE ALL AREAS OF OUR LIVES

METAPHORS DICTATE

- How we think
- How we behave
- How we perceive
METAPHORS PERMEATE ALL AREAS OF OUR LIVES

METAPHORS Dictate

▸ How we think
▸ How we behave
▸ How we perceive
▸ How our conceptual system is built
ARGUMENT IS WAR
ARGUMENT IS WAR
ARGUMENT IS WAR

- Your claims are *indefensible*
ARGUMENT IS WAR

- Your claims are *indefensible*
- He *attacked every weak point* in my argument
ARGUMENT IS WAR

- Your claims are *indefensible*
- He *attacked every weak point* in my argument
- I *demolished* his argument
ARGUMENT IS WAR

- Your claims are *indefensible*
- He *attacked every weak point* in my argument
- I *demolished* his argument
- I never *won* an argument with him
METAPHORS IN EVERYDAY EXPRESSIONS

ARGUMENT IS WAR

- Your claims are *indefensible*
- He *attacked every weak point* in my argument
- I *demolished* his argument
- I never *won* an argument with him
- His criticisms were *right on target*
WHAT IF ARGUMENT IS A DANCE?
I'M NOT CONVINCED
LET’S TALK ABOUT POLITICS
HOW METAPHORS SHAPE WOMEN'S LIVES
Consider an experiment that explored how the metaphors of crime can affect people’s decision-making. In 2011, Lera Boroditsky and Paul H Thibodeau at Stanford University asked students to read one of two crime reports; one described crime as a “wild beast preying on the city” and the other as a “virus infecting the city”. The solutions that the students presented to reduce crime were fascinating: 75% of the ‘beast’ students thought jail or punishment would resolve crime and 25% suggested social reforms. Yet of those that had been told crime “plagued” neighbourhoods, only 56% opted for more enforcement and 44% wanted social reforms.

are referred to by the female pronoun! Similarly, the complementary values of hard/soft are also used to legitimate female exclusion from the world of engineering. Masculinity is expressed both in terms of muscular physical strength and aggression, and in terms of analytical power. ‘At one moment, in order to fortify their identification with physical engineering, men dismiss the intellectual world as “soft”. At the next moment, however, they need to appropriate sedentary, intellectual engineering work for masculinity too.’ (Cockburn, 1985, p. 190)

No matter how masculinity is defined according to this ever-adaptable ideology, it always constructs women as ill-suited to technological pursuits.
I'M STILL NOT CONVINCED
HUMAN RESOURCE MANAGEMENT
PEOPLE ARE NOT RESOURCES
TRIGGER WARNING
GIVING A PLATFORM TO RACISTS
“WRESTLING WITH INCLUSION AT XYZCONF”
"WRESTLING WITH INCLUSION AT XYZCONF"
Let's talk about computers
METAPHORS ENABLE UNDERSTANDING
JULIET IS LIKE THE SUN
JULIET GAVE ME SKIN CANCER
THE GEOMETRY OF MEANING
SEMANTICS BASED ON CONCEPTUAL SPACES
PETER GÄRDENFORS
METAPHORICAL MAPPINGS PRESERVE THE COGNITIVE TOPOLOGY OF THE SOURCE DOMAIN
IN A WAY CONSISTENT WITH THE INHERENT STRUCTURE OF THE TARGET DOMAIN
METAPHORS TRANSFER INFORMATION FROM ONE CONCEPTUAL DOMAIN TO ANOTHER
WHAT IS TRANSFERRED
IS A PATTERN RATHER THAN DOMAIN SPECIFIC INFORMATION
A metaphor can thus be used to identify a structure in a domain that would not have been discovered otherwise.
GRAPH ISOMORPHISM

THIS IS HOW METAPHORS CREATE NEW KNOWLEDGE
METAPHORS OBSCURE UNDERSTANDING
“SOMETIMES OUR TOOLS DO WHAT WE TELL THEM TO. OTHER TIMES, WE ADAPT OURSELVES TO OUR TOOLS’ REQUIREMENTS”

Nicholas Carr
METAPHORS ARE THE TOOLS OF THOUGHT
METAPHORS AND CODE
WHAT A PROGRAMMER DOES

It has been believed that a programmer occasionally writes code and gets it running on a computer, and that this is what he is paid for. In spite of his obvious inefficiency, no one else seems to do this work more effectively. However, his activity is still observed principally as loafing—a kind of ritual (like the British and teatime) which must be put up with.

Another view of what a programmer does addresses more constructively all that “wasted” time and includes more than the running code, more than the symbolic code, or even the operator’s guide, the maintenance guide, or the design guide. For in fact, in response to any serious breach of the program’s integrity, a programmer will become involved, as part of the integral organization built by the original programmer. If one now looks closely, he can begin to recognize the intent of those steps in the ritual of programming.
WHAT A PROGRAMMER DOES

It has been believed that a programmer occasionally writes code and gets more than the running code, more than the symbolic code, or even participates as toasting - a kind of ritual (like the British and teatime) which must be put up with.

Another view of what a programmer does addresses more constructively all that "wasted" time and part of the integral organization built by the original programmer. If one now looks closely, he can begin to recognize the intent of those steps in the ritual of programming.
“TO PROGRAM IS TO WRITE TO ANOTHER PROGRAMMER ABOUT OUR SOLUTION TO A PROBLEM”
“NO ONE HAS SEEN A PROGRAM WHICH THE MACHINE COULD NOT COMPREHEND BUT WHICH HUMANS DID”
TYPES ARE THE CHARACTERS THAT TELL THE STORY OF OUR PROGRAMS
The motivation behind the work in very-high-level languages is to ease the programming task by providing the programmer with a language containing primitives or abstractions suitable to his problem area. The programmer is then able to spend his effort in the right place; he concentrates on solving his problem, and the resulting program will be more reliable as a result. Clearly, this is a worthwhile goal.

Unfortunately, it is very difficult for a designer to select in advance all the abstractions which the users of his language might need. If a language is to be used at all, it is likely to be used to solve problems which its designer did not envision, and for which the abstractions embedded in the language are not sufficient.

This paper presents an approach which allows the set of built-in abstractions to be augmented when the need for a new data abstraction is discovered. This approach to the handling of abstraction is an outgrowth of work on designing a language for structured programming. Relevant aspects of this language are described, and examples of the use and definitions of abstractions are given.
WITHOUT TYPES WE JUST HAVE OPERATIONS ON STREAM OF BYTES
CHOOSING THE RIGHT DATA STRUCTURE
CHOOSE THE RIGHT DATA STRUCTURE
CHOOSE THE RIGHT DATA STRUCTURE

- Array
CHOOSE THE RIGHT DATA STRUCTURE

- Array
- Set
CHOOSE THE RIGHT DATA STRUCTURE

- Array
- Set
- LinkedList
CHOOSE THE RIGHT DATA STRUCTURE

- Array
- Set
- LinkedList
- Queue
CHOOSE THE RIGHT DATA STRUCTURE

- Array
- Set
- LinkedList
- Queue
- Stack
A PROGRAM’S EXPLANATORY POWER IS THE MEASURE OF ITS OWN ELEGANCE
DATA STRUCTURES HAVE EXPLANATORY POWER
COGNITIVE LEAPS
TASK SCHEDULING
TASK SCHEDULING

QUEUEING THEORY
ROUTE PLANNING

GRAPH THEORY
RUMOUR MONGERING

DATABASE REPLICATION
THE MATHEMATICAL THEORY
OF EPIDEMICS

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LONDON
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DATABASE
REPLICATION

EPIDEMICS
SO EVERYTHING IS A METAPHOR?
I DON'T BELIEVE YOU
Whenever nodes need to agree on a common value, we start a consensus algorithm to decide on a value. There's usually a leader process that takes care of making the final decision based on the votes it has received from its peers.
DISTRIBUTED SYSTEMS METAPHORS

Nodes communicate sending messages over a channel, which might get congested due to too much traffic. This could create an information bottleneck, with queues at each end of the channels backing up.
FOUR METAPHORS

DISTRIBUTED SYSTEMS METAPHORS

These *bottlenecks* might render one or more nodes *unresponsive*, causing *network partitions*. Is the process that's taking too long to *respond dead*? We won't know unless we set a timeout...
BUZZWORDS
CONTAINERS

- Standard
- Ship Anywhere
- Train, Ships, Trucks
- Stackable
- Reusable
Halley's Diving Bell
Microservices

a definition of this new architectural term

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- Componentization via Services
- Organized around Business Capabilities
- Products not Projects
- Smart endpoints and dumb pipes
- Decentralized Governance
- Decentralized Data Management
- Infrastructure Automation
- Design for failure
- Evolutionary Design
MICROSERVICES

- Decentralised Governance
- Monolith vs. Microservice
- Isolation
- Collaboration
- Small is better - Big is cumbersome
- David vs. Goliath
BRING POWER BACK TO THE DEVELOPER AND THE DEVELOPER WILL MAKE YOU A KING
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RABBITMQ
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MASTER THE ART OF MEANING AMPLIFICATION
OUR PROGRAM IS THE METAPHOR FOR THE SOLUTION WE FOUND
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THANK YOU!

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