

AV Creative Petroleum Exploration*

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Presentation by the author on this subject at another Playmaker Forum is included in the special collection of them.

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Abstract

Oil and Gas-finding is an art that requires a creative flair. Modern theory says that creativity is a skill that can be learned and developed through attention and practice. If oil is "first found in the mind" as Wallace Pratt (1952) taught us, then developing skills that enhance creativity should be a goal of all explorationists.

What characterizes effective explorers? Are they creative? A study conducted by Norman Foster and myself showed that effective explorationists are creative.

How is creativity related to petroleum exploration? Finding significant oil and gas accumulations involves creating new ideas. Parke Dickey (1958) put it best when he said, "We usually find oil in a new place with an old idea; sometimes we find oil in an old place with a new idea, but we seldom find much oil in an old place with an old idea. Several times in the past we thought we were running out of oil, whereas actually we were only running out of ideas."

Is creativity all that characterizes effective explorers? No, besides creativity, there are many other personal traits that they seem to possess such as persistence, resourcefulness, and enthusiasm.

Most of us don't possess all of the traits of effective explorers, and therefore being part of teams whose members have professional and personal skills that complement our skills is an effective strategy. The lone explorationist who finds lots of oil or gas by themselves, without help, is a myth.

Creative exploration is a skill. With attention and practice, it can be learned and applied by anyone. Exposure to the theory and practice of creativity in petroleum exploration gives explorationists a start toward the ultimate goal of being "oil finders."

Everyone needs to find his/her own path to creativity. Some techniques are more effective for certain individuals than others.

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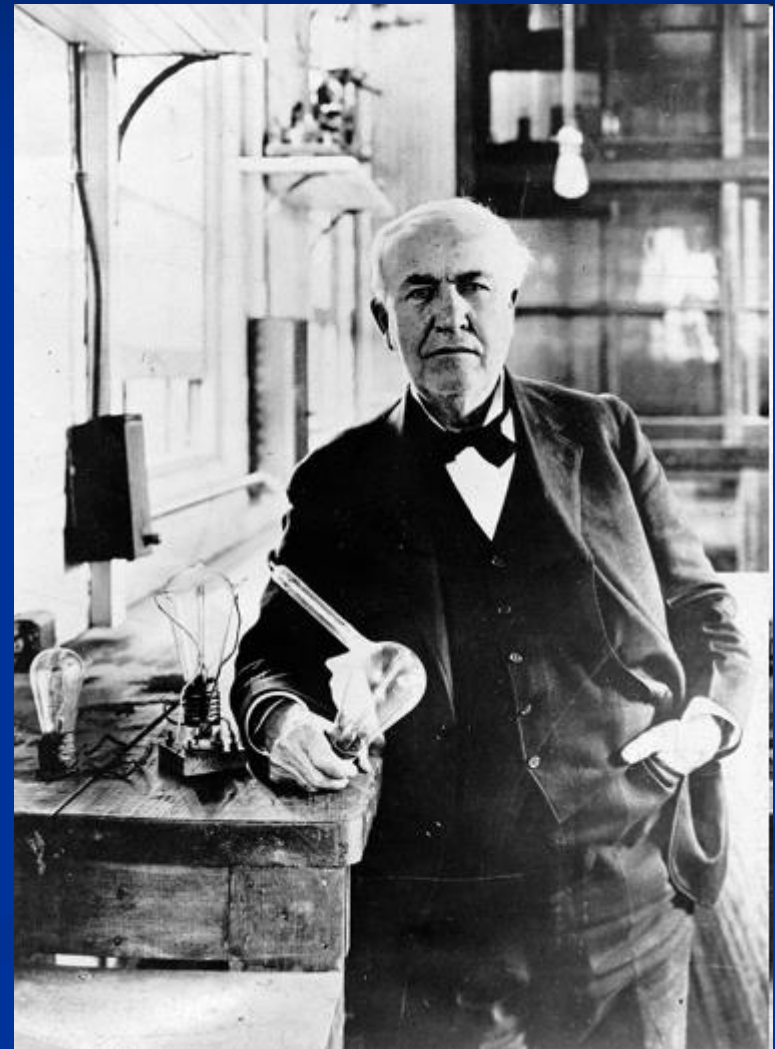


Creative Petroleum Exploration

Edward A. Beaumont
DPA Playmakers Forum
March 31st, 2015

Presentation

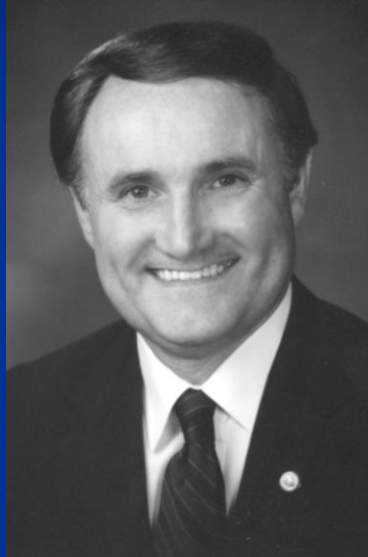
- Misperceptions
- Ideas find oil
- The creative process
- Characteristics of oil & gas finders
- Becoming more creative



Acknowledgements



Ted Bear



Norm Foster



Dick Vincelette



Doug Strickland

Misperceptions of Oil & Gas Exploration



what my parents think
I do



what my friends think
I do



what Society thinks I
do



what my boss thinks I
do



what I think I do



what I really do

Misperceptions of Oil & Gas Exploration

- Technology finds oil – i.e. seismic tech
- Finding oil & gas is a matter of luck
- Skill plays a minor role



Out of Ideas – Not Oil



Parke Dickey late 1950s



"Invitado de Honor"
IV Simposio Bolivariano. 1991



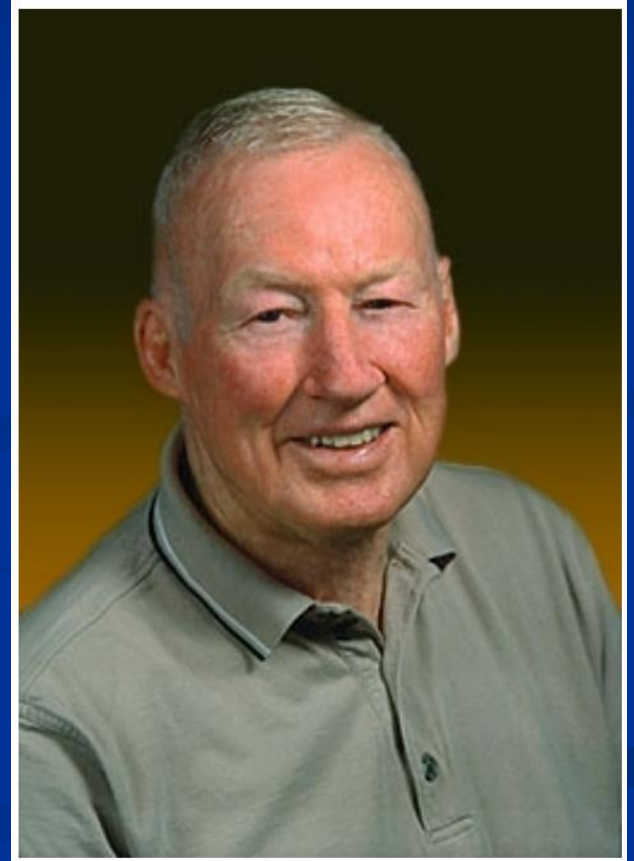
“We usually find oil in **new places with old ideas**.

Sometimes, also, we find oil in an **old place with a new idea**,
but we seldom find much oil in a **old place with an old idea**.

Several times in the past we have thought we were running out of oil whereas actually **we were only running out of ideas**.” Parke A. Dickey, 1958

New Ideas

“Part of the definition of a new idea is that it will be rejected at first,”
Evolution teaches us that most new ideas don’t work, so we learn to be against them. Big ideas do not come from groups or committees. Throughout history they have come from individuals...and ‘normal’ people almost never recognize the importance of the idea until much later on.”

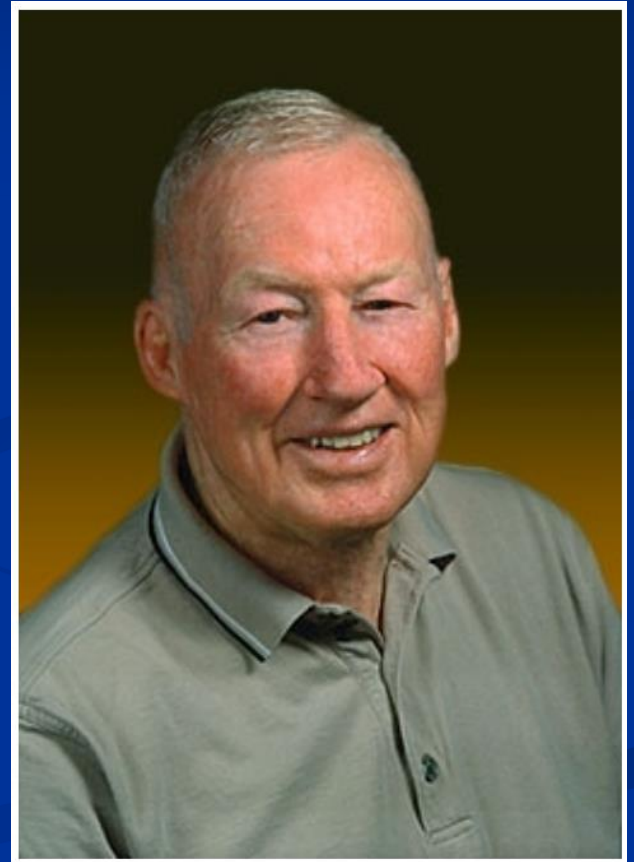


John Masters

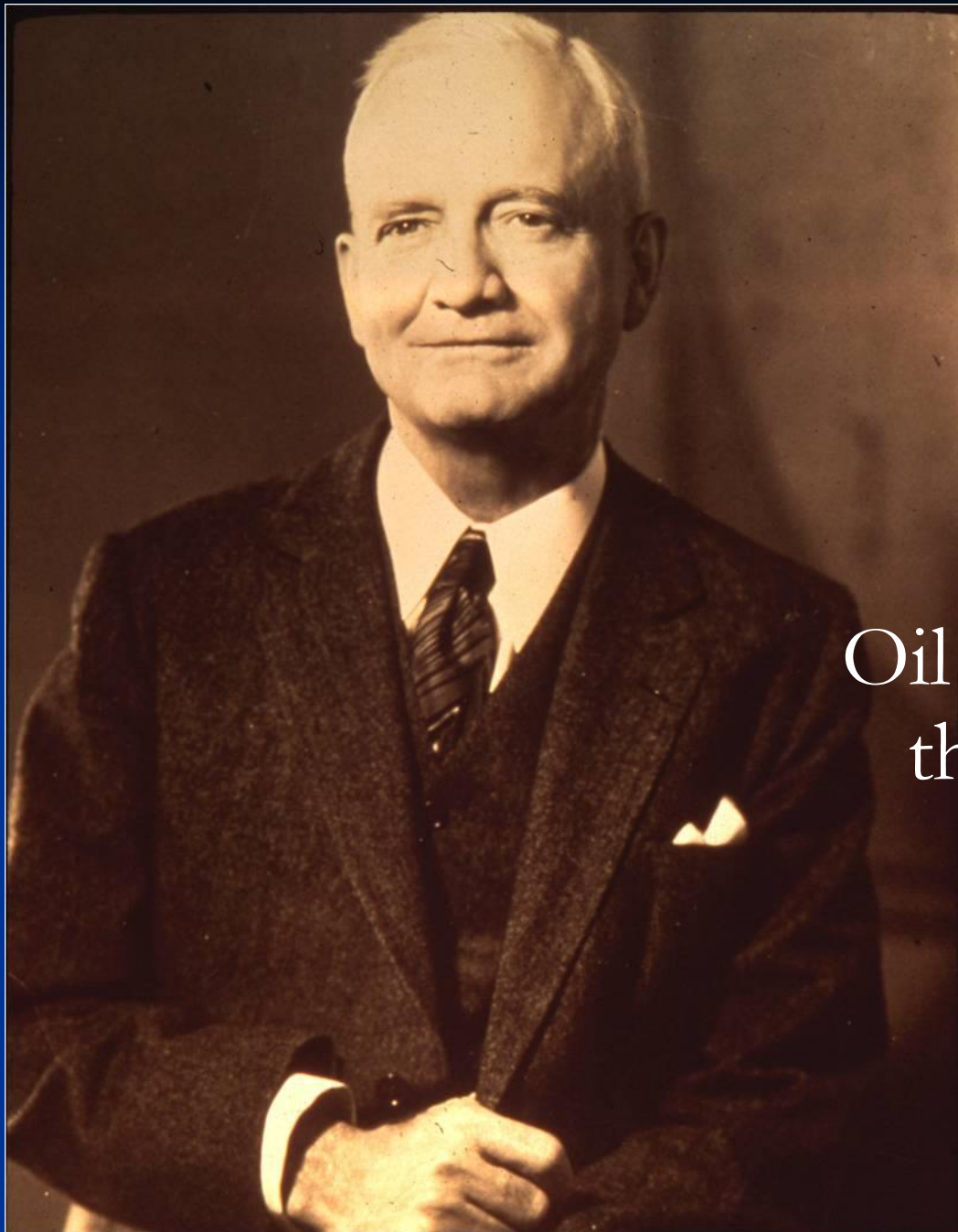
New Ideas, Cont'd

“To achieve outstanding results, new exploration concepts must be applied, and few investors are willing to accept that degree of risk.”

- Oil and Gas Investor, July 1, 2008



John Masters

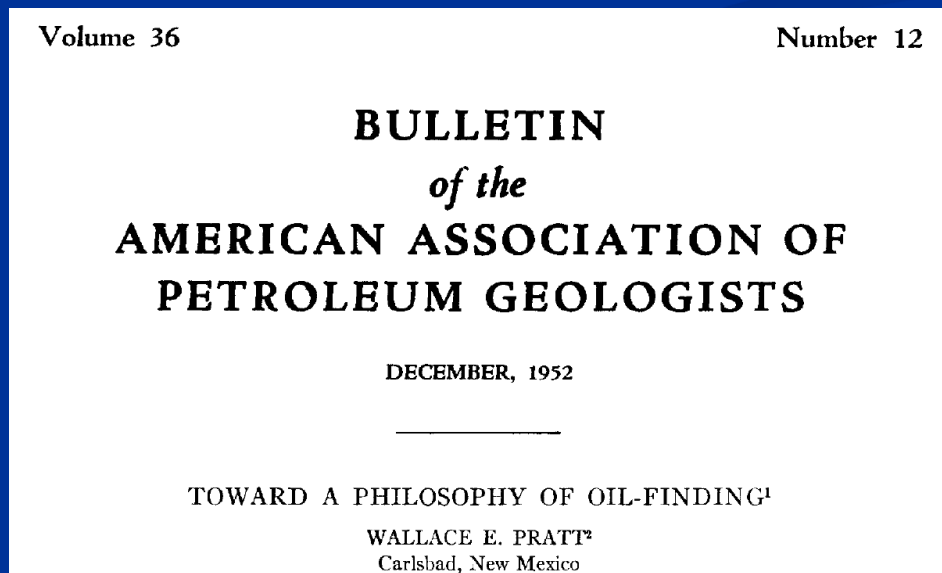


Oil is first found is in
the mind.

-- Wallace Pratt, 1952

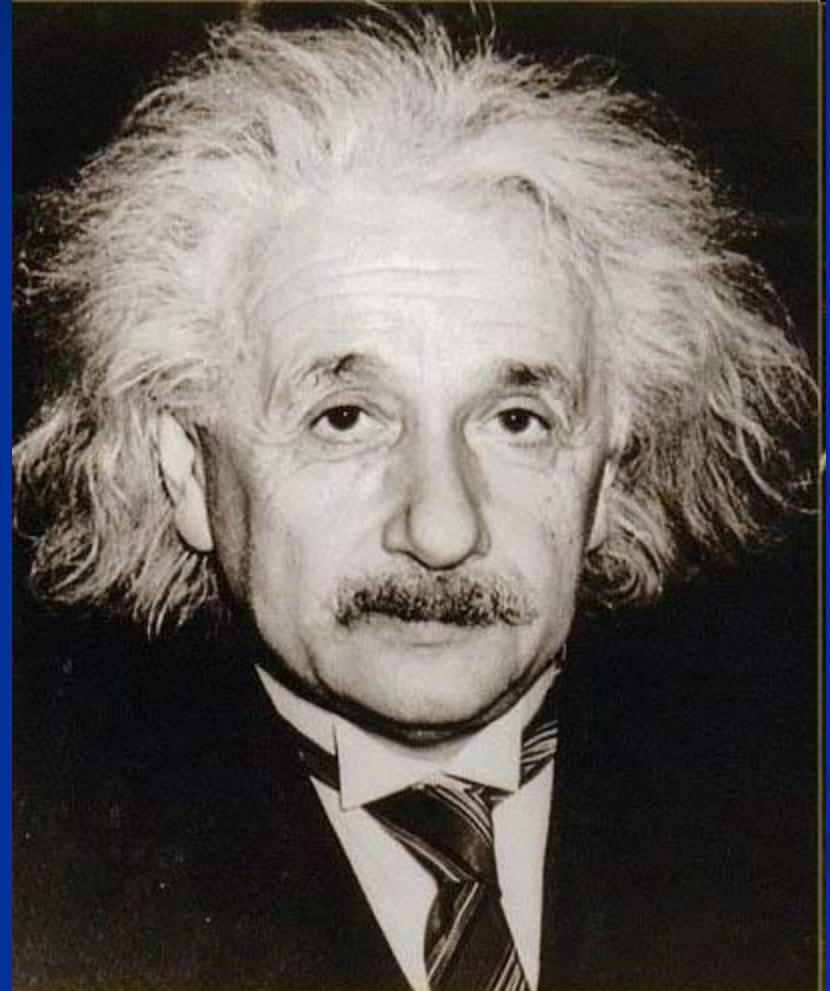
Pratt's Mental Blocks to Oil-Finding

- Natural conservatism of trained scientific mind
 - Ignoring significance of what remains unknown
- “however small our knowledge may be, tends often, not only to color, but actually to obscure what remains unknown to us”

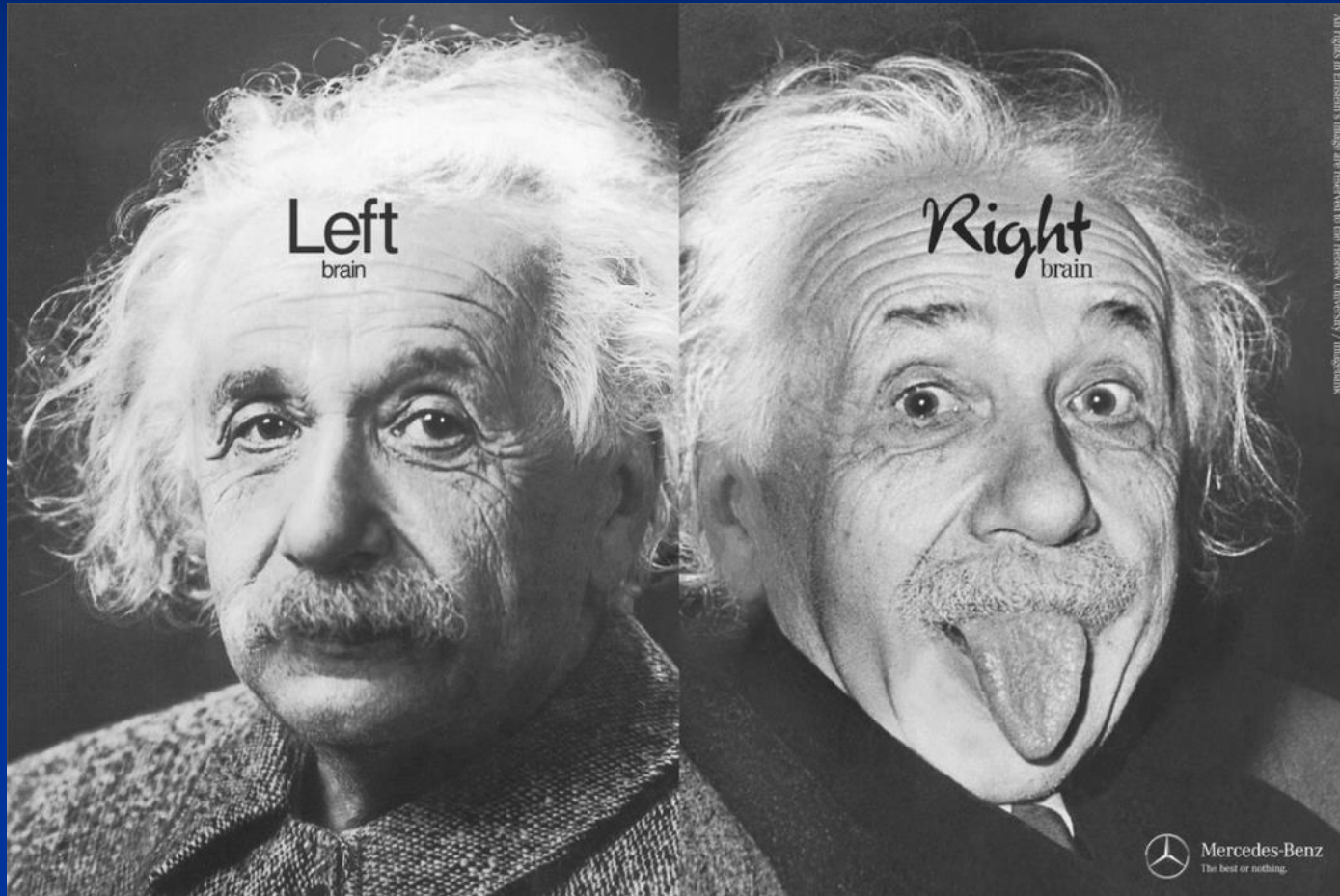


Definitions of Creativity

- “Having original ideas that have value” (Ken Robinson, TED lecture)
- “The ability to bring something new into existence through **imaginative skill**” (after Webster’s)

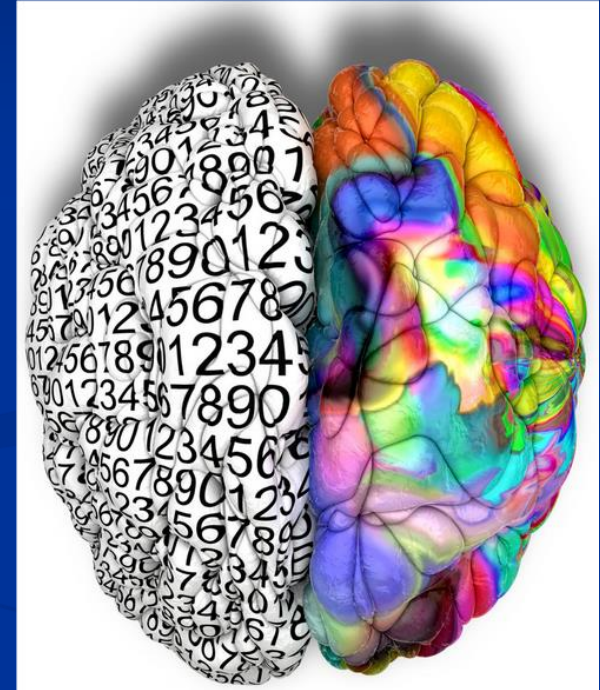


Right Brain - Left Brain Model



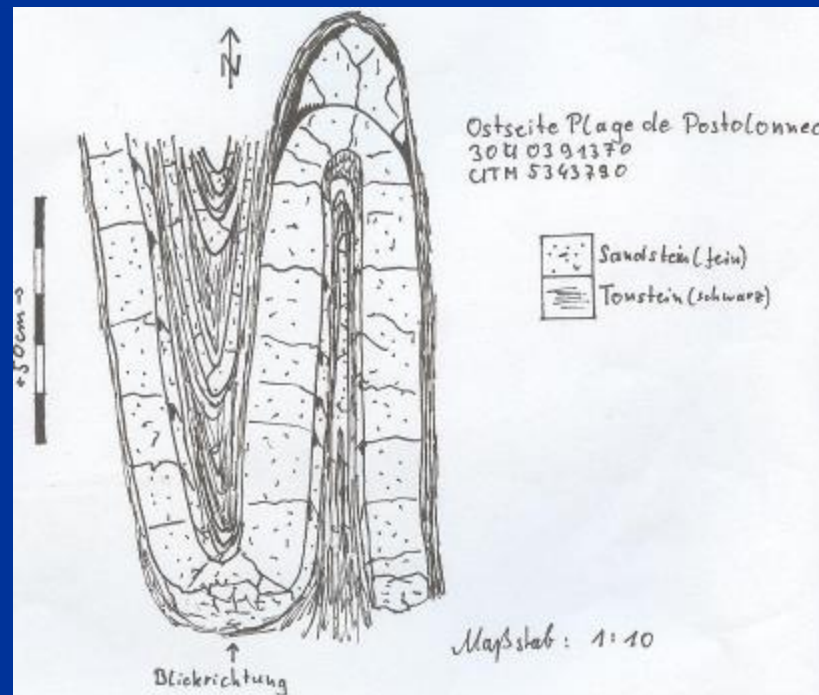
Right Brain - Left Brain Model

Left Brain	Right Brain
Logical	Intuitive
Rational	Holistic
Analytical	Synthesizing
Objective	Subjective
Looks at Parts	Looks at wholes



The Creative Process

- First Insight
- Saturation
- Incubation
- Illumination
- Verification



Field Sketch of folds on coast of Brittany (the lostgeologist blogspot, 2009)

First Insight

- Right Brain Function
- Intuitive Leap
- See 'whole picture' but something is missing



Saturation

- Left brain function
- Gathering, sorting, & categorizing information
- Arduous
- Can take hours or years



Incubation

- Left brain falters, right takes over
- Feel sense of anxiety
- Put it away for awhile
- Right brain works problem subconsciously



Illumination

- Left brain becomes aware of solution
- Pieces fall together
- Ah-Ha! Moment
- Solution seems obvious



Verification

- Left brain process
- Wonder where solution came from
- Test the solution



Peach and Horne

- Scottish Geologists
- Unraveled complex geology of Scottish Highlands
- Peach more “right-brained”
- Horne more “left-brained”



Dr. John Horne .

Dr. Benjamin Neeve Peach .

Characteristics of Oil-finders



Characteristics of Oil Finders

- **Question:** Discuss other oil finders you know or have known. What characteristics made them oil finders?
- “1. Persistence is #1. 2. Enthusiasm for oil exploration. 3. Self-confidence. 4. Risk-takers. 5. Intuitive sense of where exploration opportunities exist. 6. Ability to diagnose critical elements of a play.” (David Powley)

Survey Responses

- **Question:** Discuss other oil finders you know or have known. What characteristics made them oil finders?
- “The scientific oil finder’s characteristics, I believe, are as follows: Observant, Curious, Logical, Intelligent, Creative, Dedicated, Out-Doorsy, Risk Oriented, Independent, Derives pleasure from making order out of chaos. I hope that the above does not sound too much like a horoscope reading, but all or parts of each are needed.” (Graham Curtis)

Empowering Your Creative Exploration Skills

- Find your own pathway to creativity
- Be prepared to be wrong
- Defocus your mind
- Learn to relax and concentrate
- Overcome blocks
 - Emotional
 - Conceptual



Emotional Blocks to Creativity

- Fear of failing
- Intolerance for ambiguity
- Prefer to judge rather than create ideas
- Unable to relax, incubate, “sleep on it”
- Not challenged by a problem
- Over-motivated to succeed quickly
- Lack of imaginative control, can't distinguish fact from fantasy

Adams, 1986

Conceptual Blocks to Creativity

- Making mind up too quickly, not looking for alternatives
- Biases from previous experience
- Falling in love with your ideas
- Uncontrolled imagination
- False sense of security regarding geological knowledge
- Natural conservatism of the trained scientific mind

Developing Exploration Thinking Skills

■ Remember the creative process

- Respect insights – record them and follow them up
- Expect to be anxious
- Learn to put problem away
- Check ideas
- Sell ideas

■ Develop visual skills

- Learn to draw, diagram
- Build models

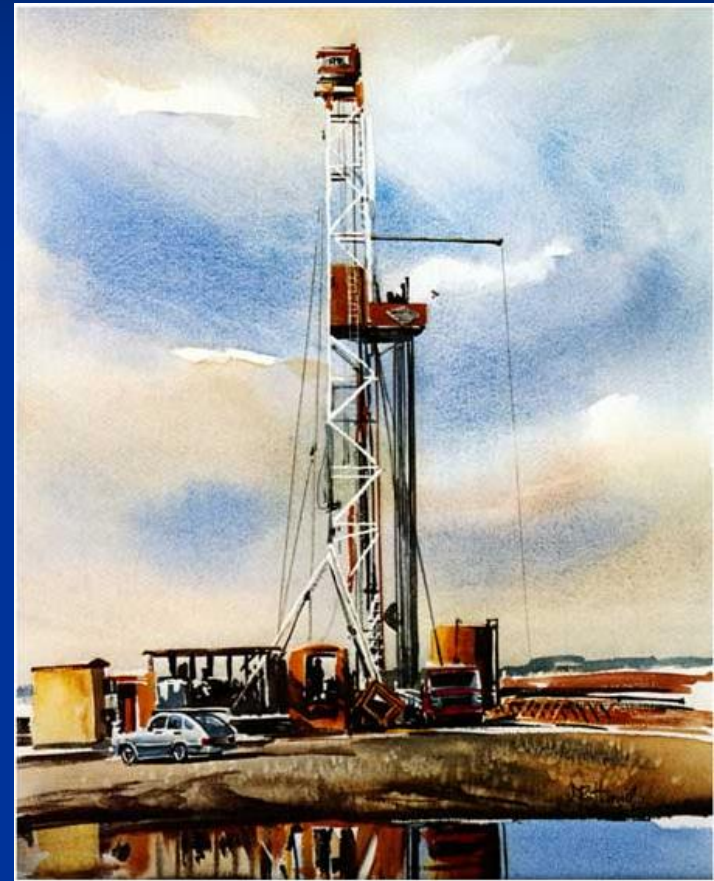
■ Emulate oil-finders

Max Steineke – Creator of Ghawar Prospect



Characteristics of Oil-finders

- Persistent
- Optimistic
- Creative
- Risk-takers
- Courageous
- Curious
- Observant
- Enthusiastic
- Confident



Conclusions

- New ideas affect **chance** of success – i.e., trying something different
- Don't always find what we expected
- Persistence pays
- Technology helps
- Create your own luck



Dan Stewart



Norm Foster October 2, 1934 - January 1, 1999