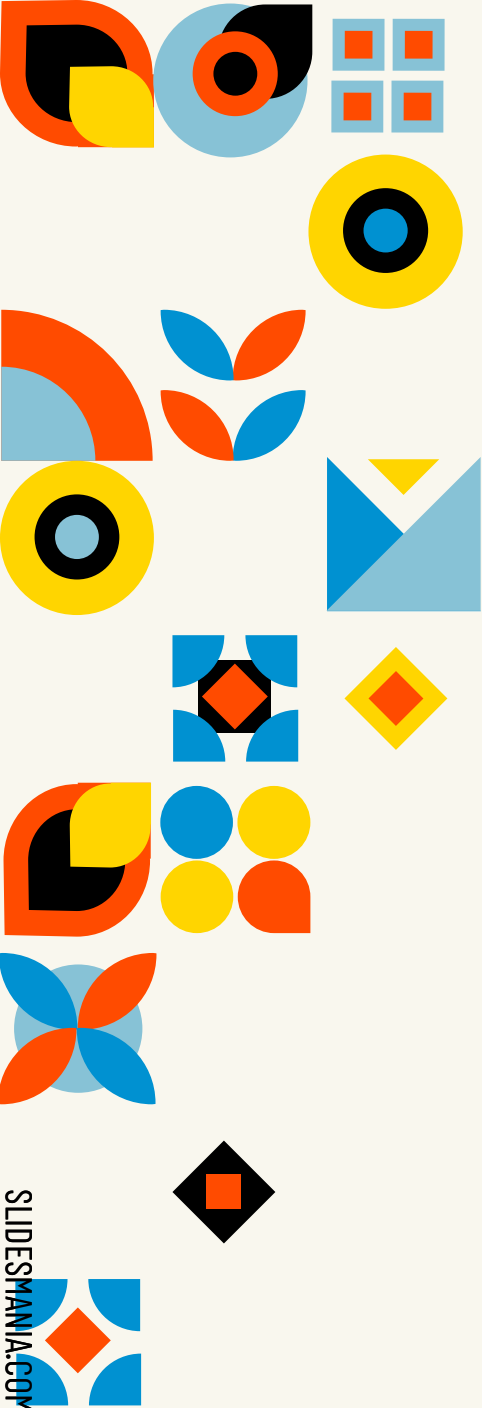


Basics of Creativity

TRIZ

Aleksandra Kalmykova, Julia Zagurenko,
Mikhail Tsaregorodtsev

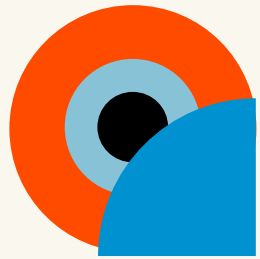




Tricks for activating the creative process

- ▶ Brainstorm
- ▶ Method of focal objects
- ▶ Morphological analysis.

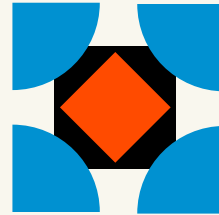
Brainstorm



Preparation



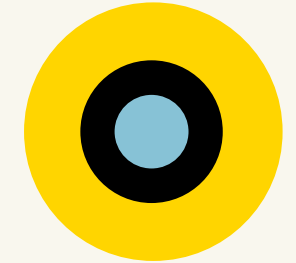
Ideation



Sorting



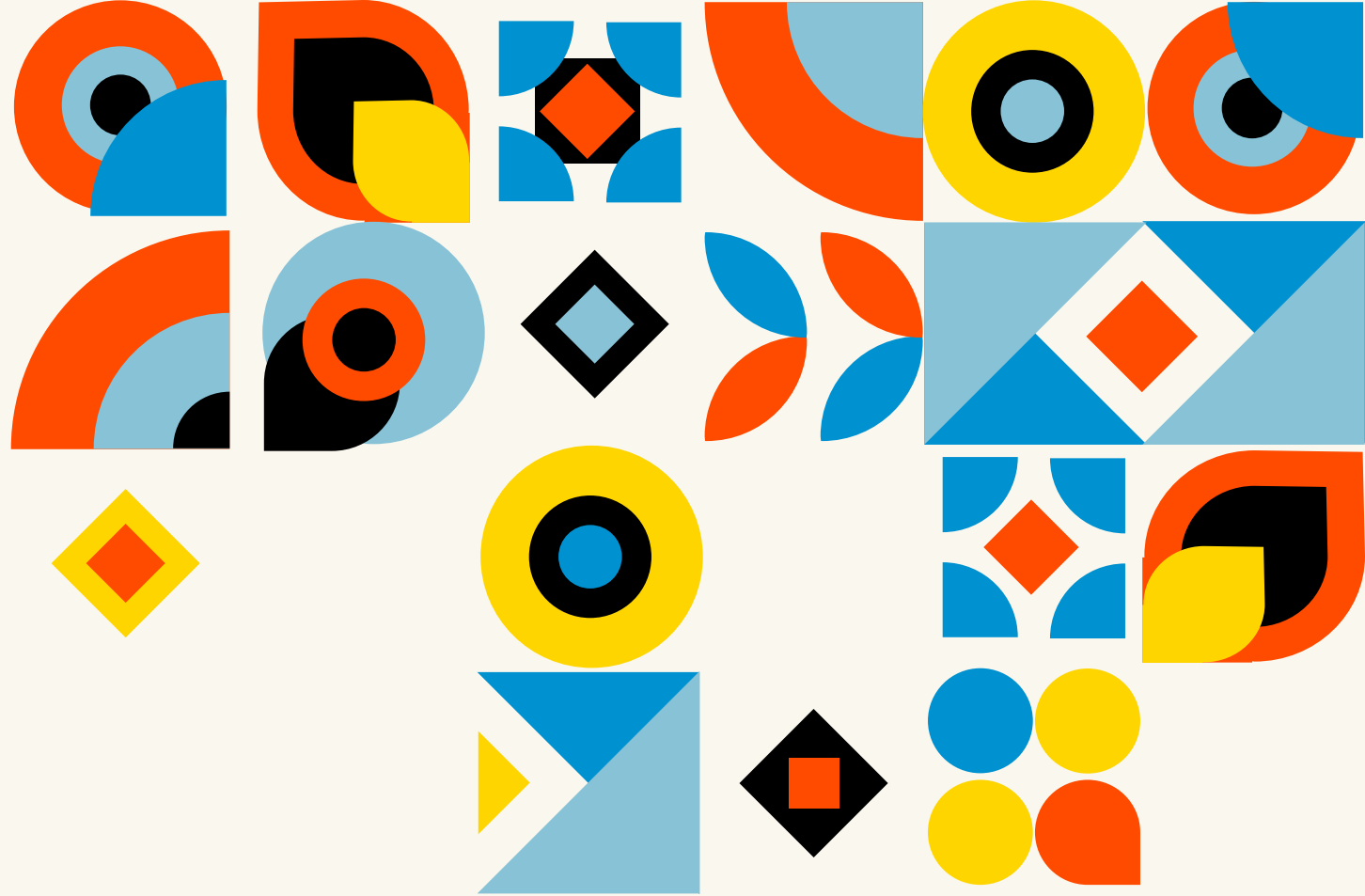
Criticism



Analysis



Your task will be to come up with as many uses for a pencil as you can imagine.
You can say literally anything that comes to your mind.



Exercise



Method of focal objects

Focal Object	Object 1	Object 2	Object 3	Object 4



Example:

Focal Object:	Cat	Laptop	Autumn
Vase	Fluffy	Metal	Cold
	Paws	Buttons	Windy
	Tail	Screen	Rainy
	Whiskers	Lightning	Leaves fall
	Claws	Robust	
	Purrs		



Using the method of focal objects, come up with a new design for sunglasses.

Try to apply at least one property of each object you chose and think, how could this improve sunglasses.

Remember: a pretty physical appearance is a good quality too!



Exercise



Morphological analysis

Parameters	1	2	3	4
Material				
Shape				
Color				
Smell				



Example:

Parameters	1	2	3	4
Material	Cardboard	Cloth	Plastic	Metal
Shape	Circle	Triangle	Elongated	Irregular
Color	White	Blue	Black	Purple
Smell	Odorless	Mint	Cheese	Floral



Try and solve the following task within 3 minutes using morphological analysis:
"Come up with a bright and memorable bag (or package) that could be given as a gift to guests of a newly opened perfume store."



Exercise

Four main principles



Objectivity
of system development laws

Contradiction



Concreteness

Ideality





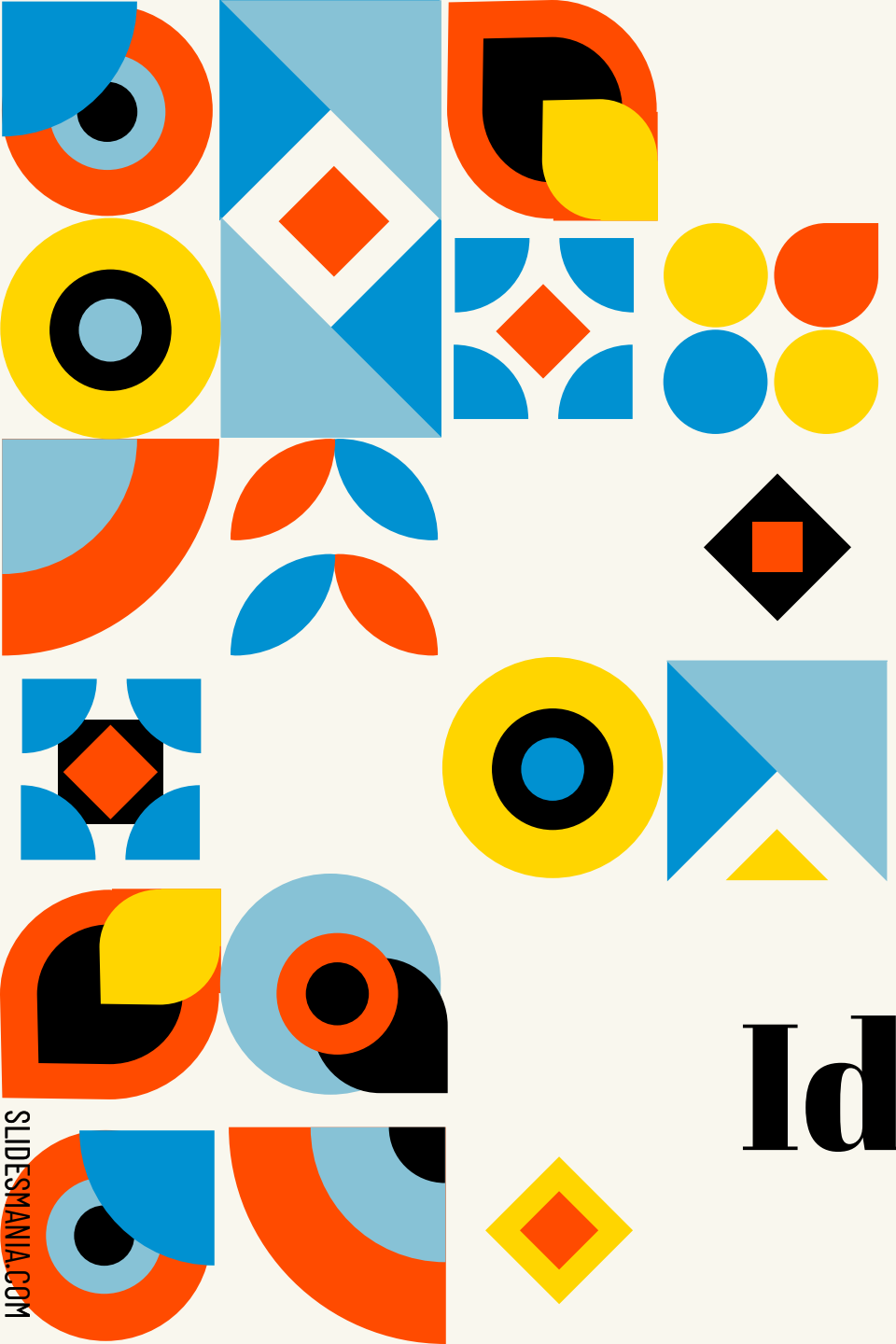
Three types of contradictions

Administrative

Technical

Physical





- ▶ Resources are redistributed within the system.
- ▶ There is no system but its function continues.
- ▶ The function becomes unnecessary.

Ideal Final Result

The STC operator and its application



- ▶ Reduce and increase the size of the system
- ▶ Accelerate and slow down processes in the system.
- ▶ Increase and decrease allowed expenses.

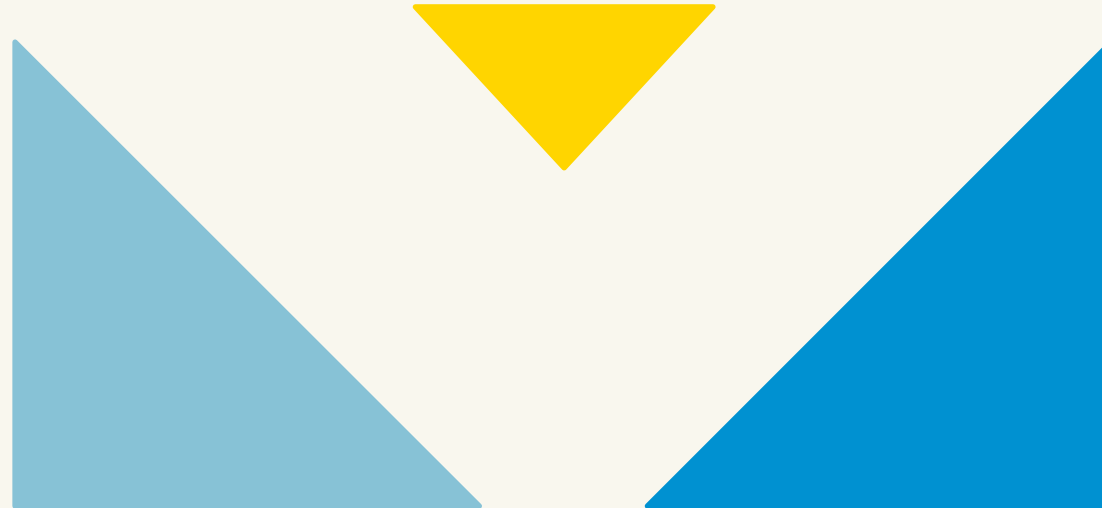


Principles of TRIZ

The Principle of Crushing

Make the object collapsible

Divide
the object
into independent
parts



Increase
the degree
of fragmentation
of the object

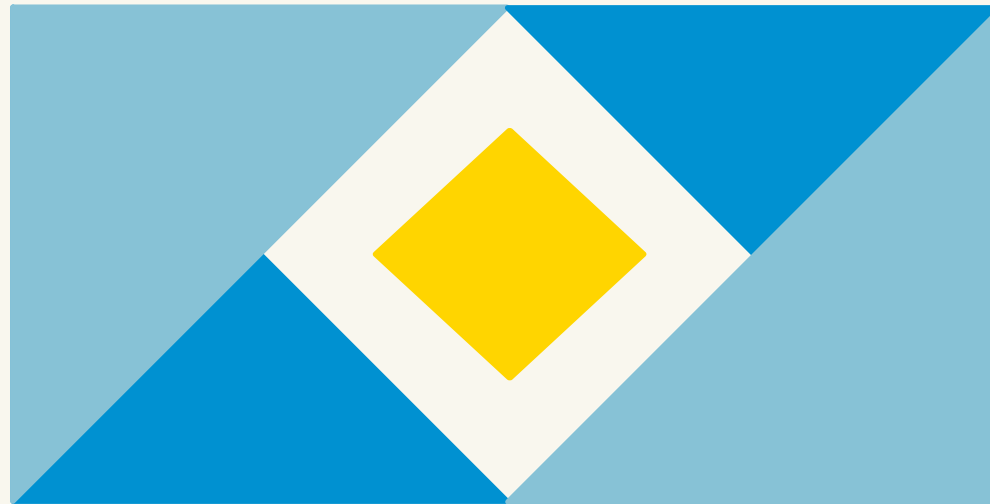


Principles of TRIZ

Principle of unification

Combine homogeneous or adjacent operations

Connect
homogeneous
or adjacent
objects

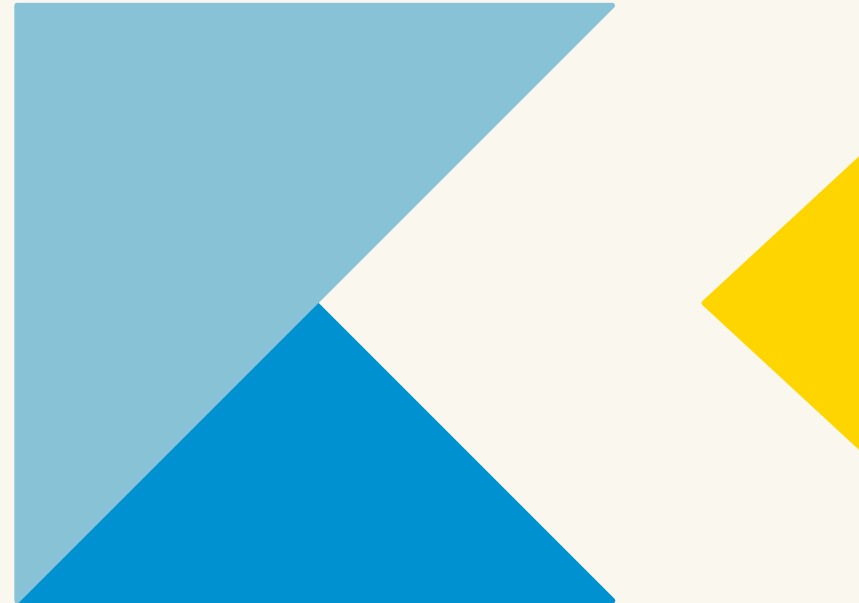


Place one
object
inside
another.

Principles of TRIZ

Principle of expulsion

To eliminate a contradiction, remove the "interfering" property of an object or select only the "necessary" parts to optimize an object.





Principles of TRIZ

Principle of partial or excessive action



If it is difficult to achieve 100% effectiveness, you need to "get a little less" or "a little more" - the task will be simplified significantly.

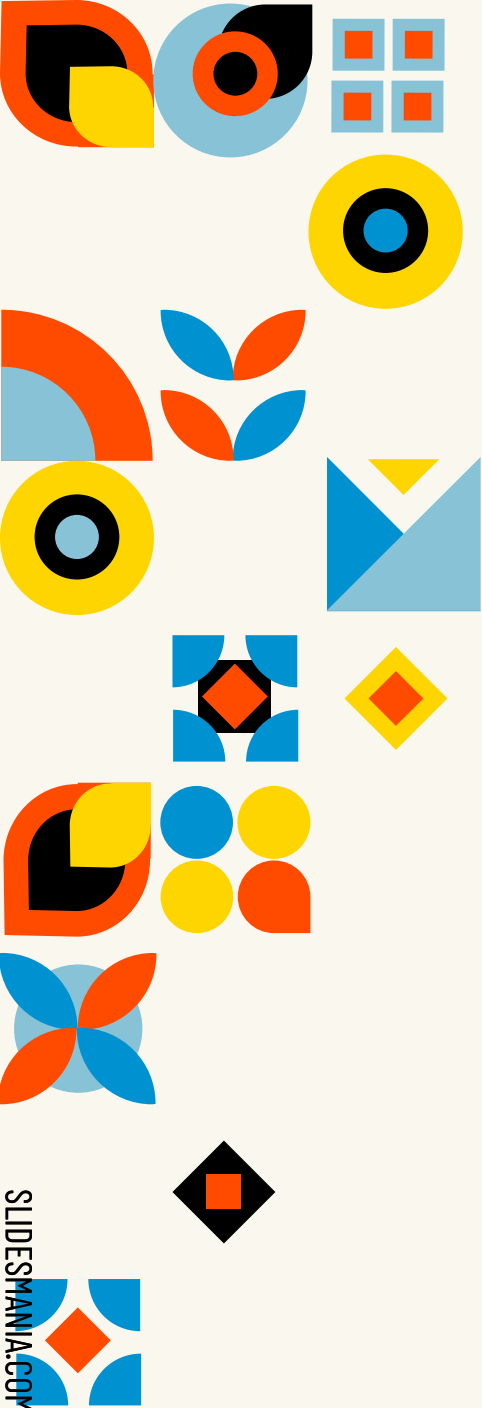


Principles of TRIZ

The principle of an "Intermediate":

- ▶ a) Use an intermediate object that transfers or transmits an action.
- ▶ b) Temporarily attach another (easily removable) object to the object.





Tasks

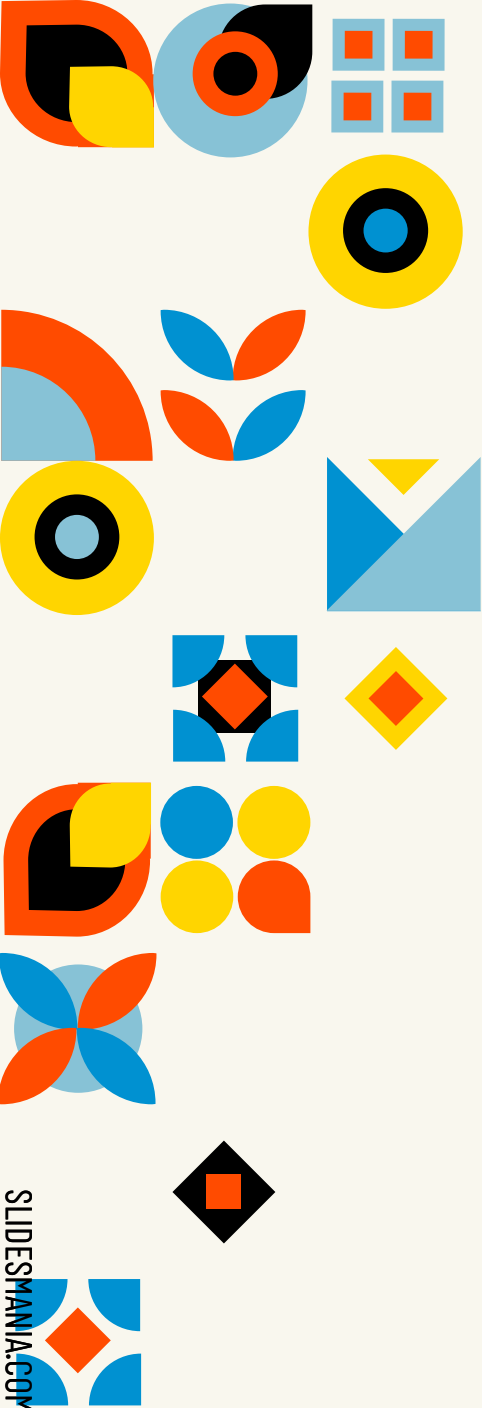
- ▶ What can we do to let astronauts take their medicine without constantly interrupting their work and without damaging them.



Tasks

Solution:

It is necessary that with a minimum of actions the drug enters the body and is absorbed at the same time. To do this, scientists have invented patches that relieve the symptoms of seasickness. The active substance penetrates the body through the skin and the dosage is not violated. Contraceptive and anti-nicotine patches work on the same principle.



Tasks

- ▶ The builder was forbidden from carving his name, but he knew that if he didn't follow the order, he'd be executed. If he did follow the order and carved his name anyway, then his descendants would never know who the real author of the lighthouse was. The builder survived, but the world learned about him. How could that be?

.



Tasks

Solution:

The solution: The builder carved his name onto the stones of the lighthouse and then covered it with lime. He knew the lime would crumble away in a few decades and his name would live on for centuries.

