

Ethics as a Quality Attribute

Michael Keeling

IBM

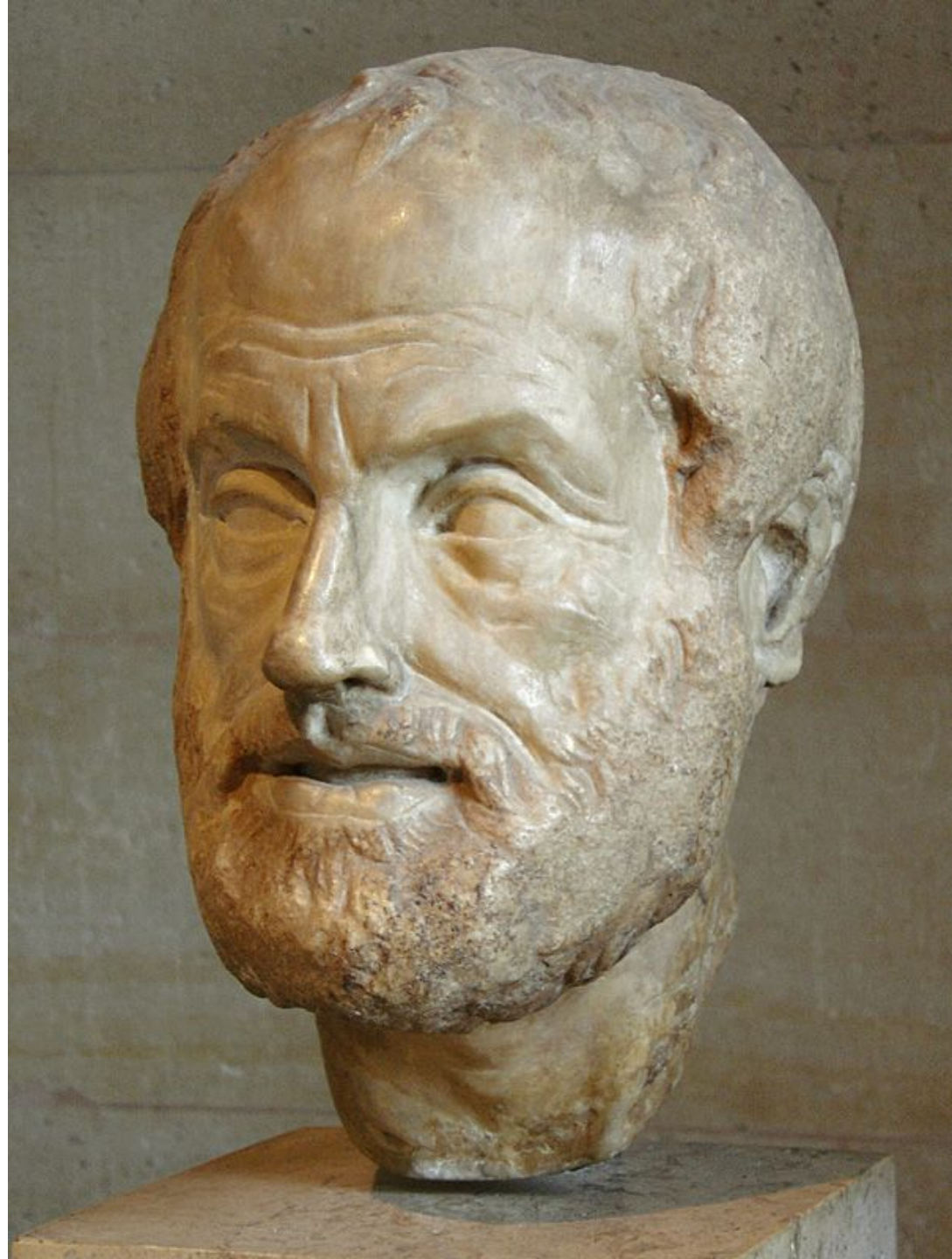
@michaelkeeling

Virtue Ethics

Consider the character of
the individual

“It’s OK to lie if your
intentions are virtuous.”

Aristotle



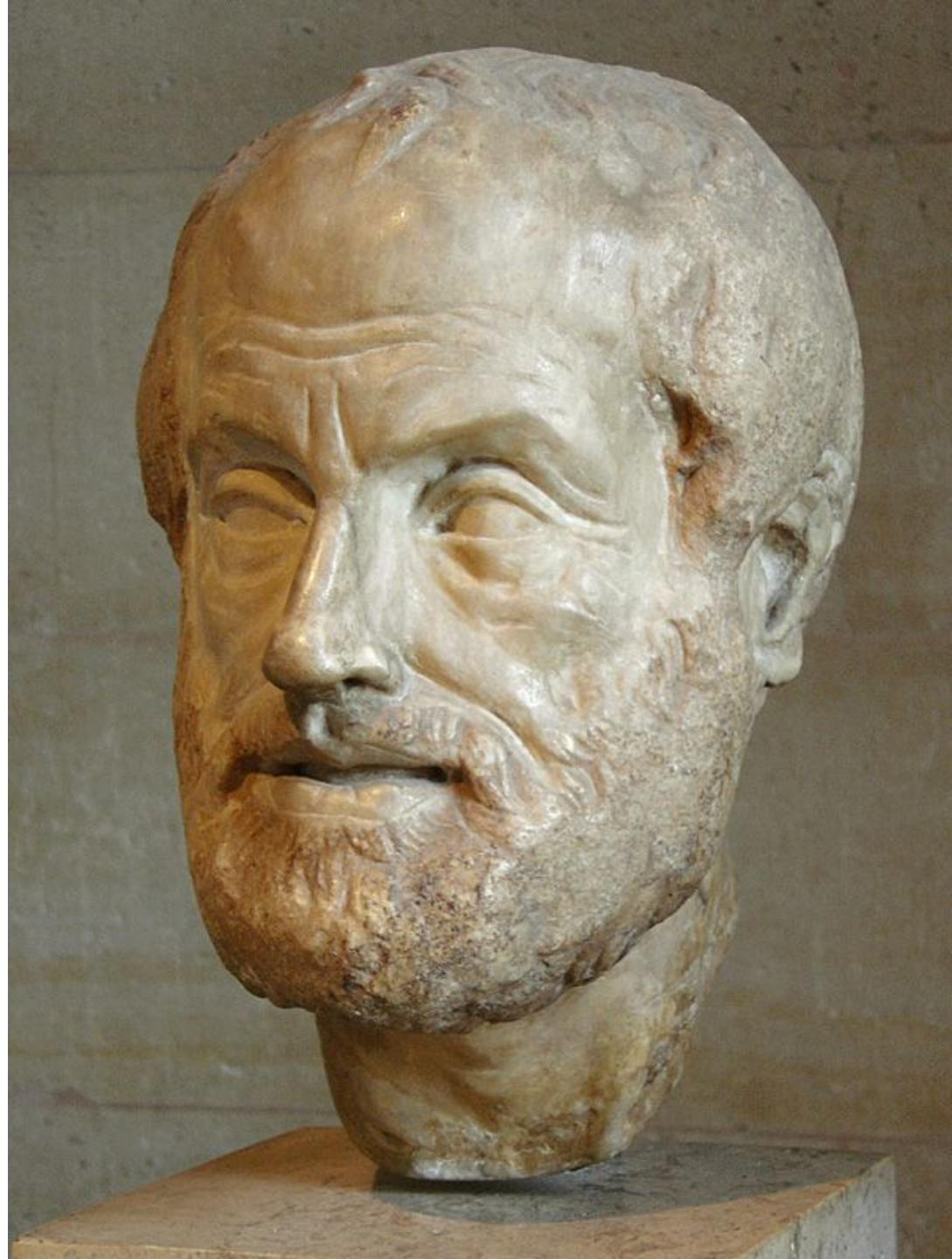
Virtue Ethics

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No Decision: Loyalty is a good characteristic, but to whom are you loyal?

Aristotle

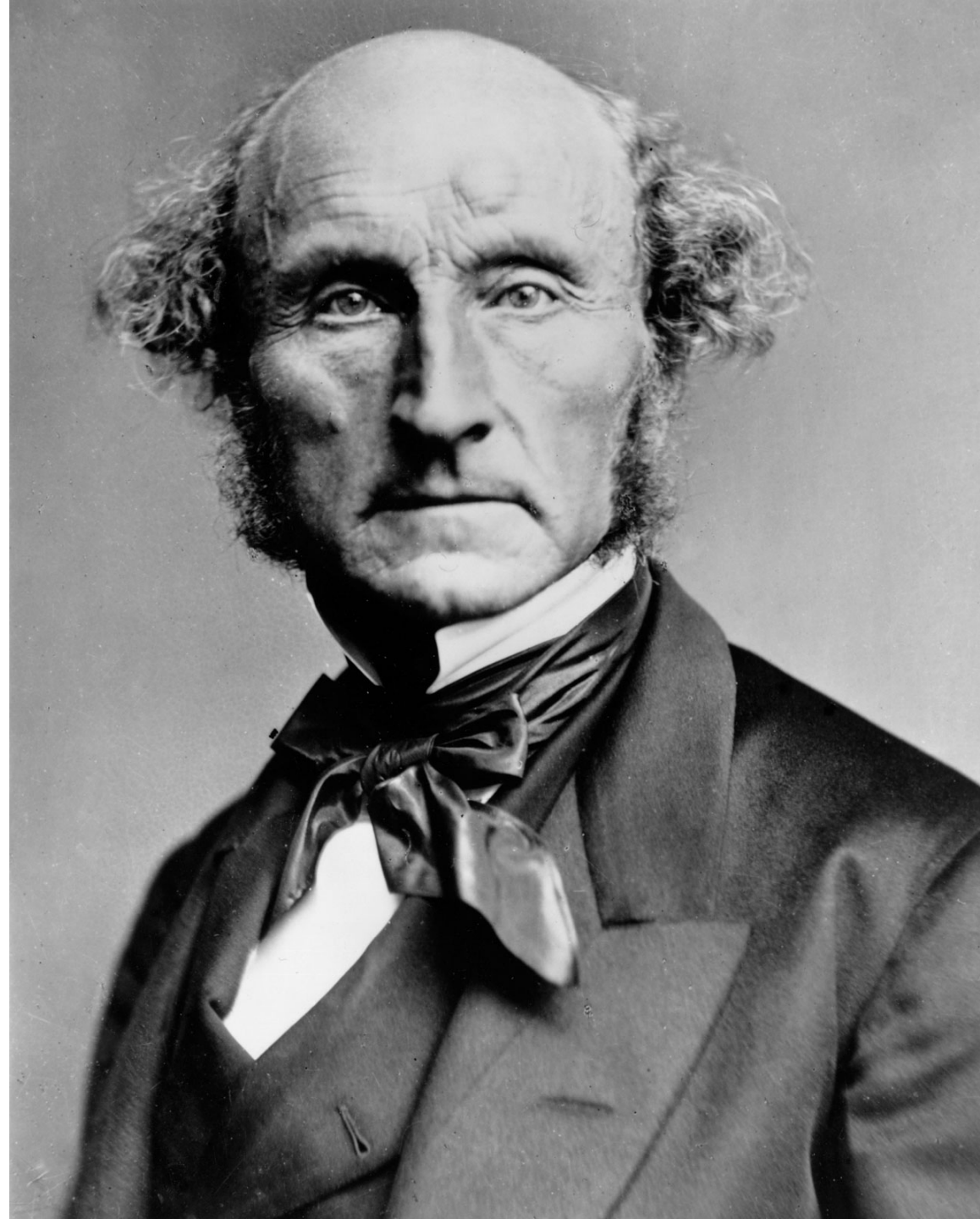


Utilitarianism

Consider the consequences

“It’s OK to tell a lie only if it helps more people than telling the truth.”

John Stuart Mill



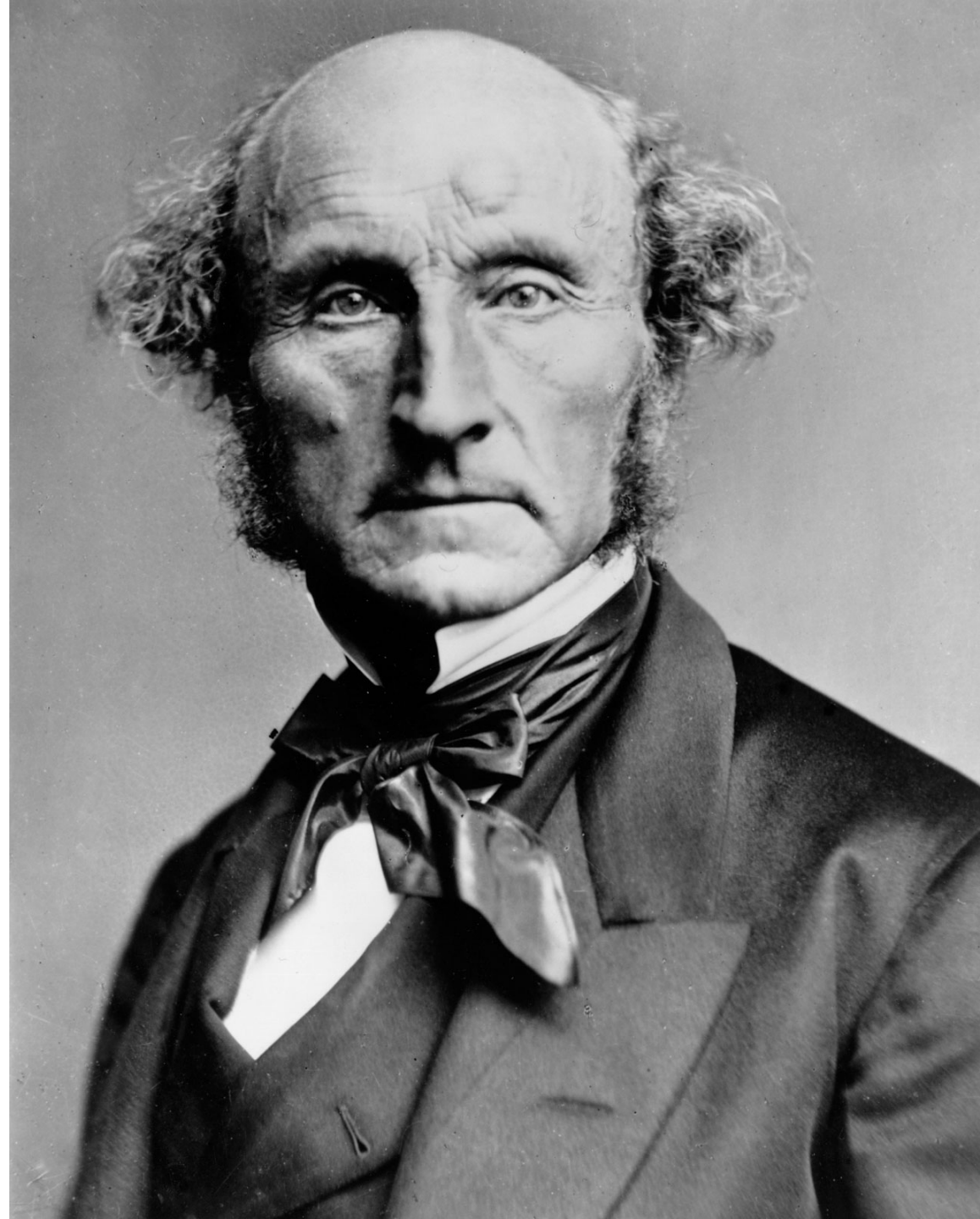
Utilitarianism

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“It’s OK to tell a lie only if it helps more people than telling the truth.”

Decision: We help more people by shipping sooner.

John Stuart Mill

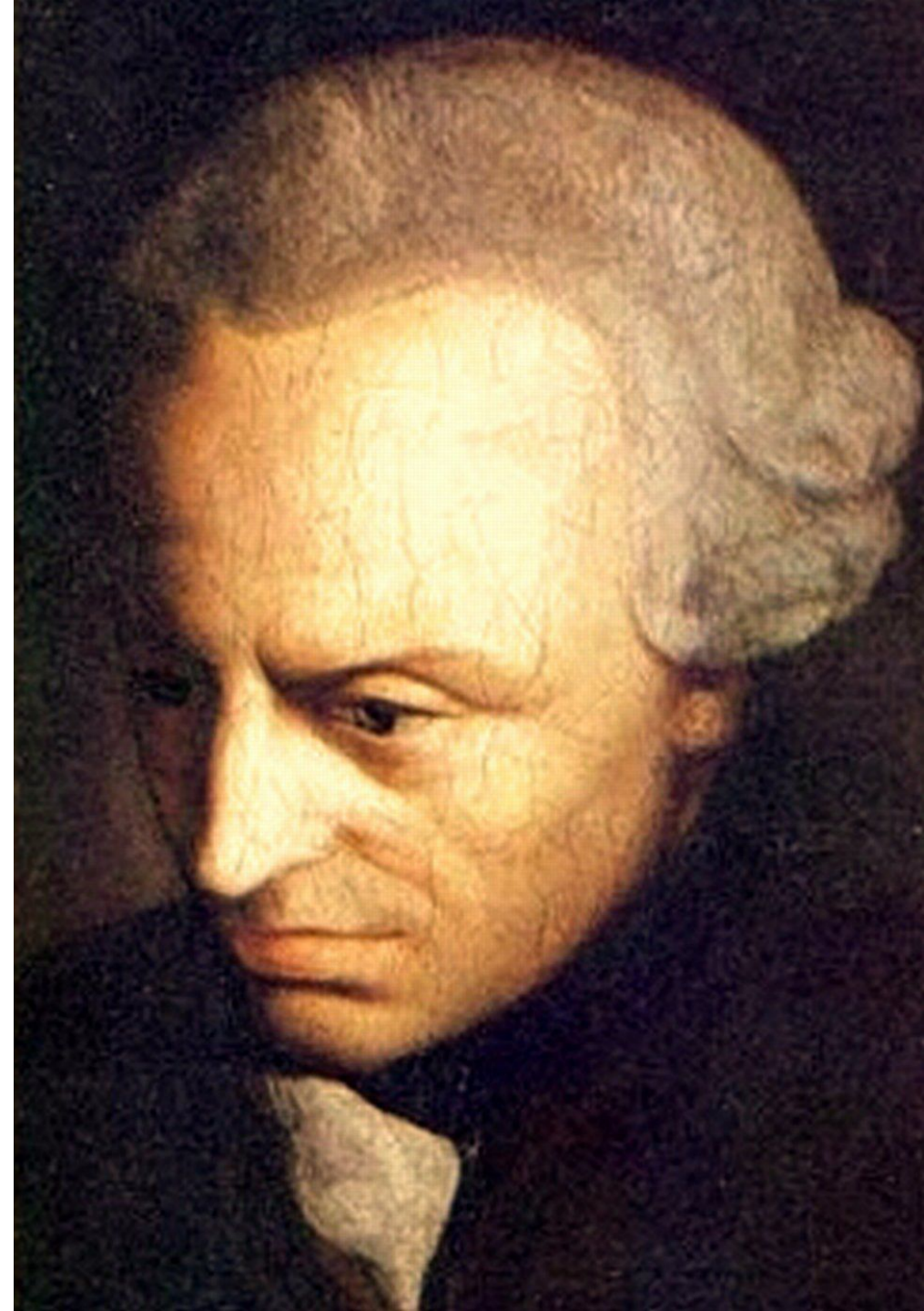


Deontological Ethics

Rules or principles define moral obligations

“It is never OK to lie, even if your intentions are good.”

Immanuel Kant



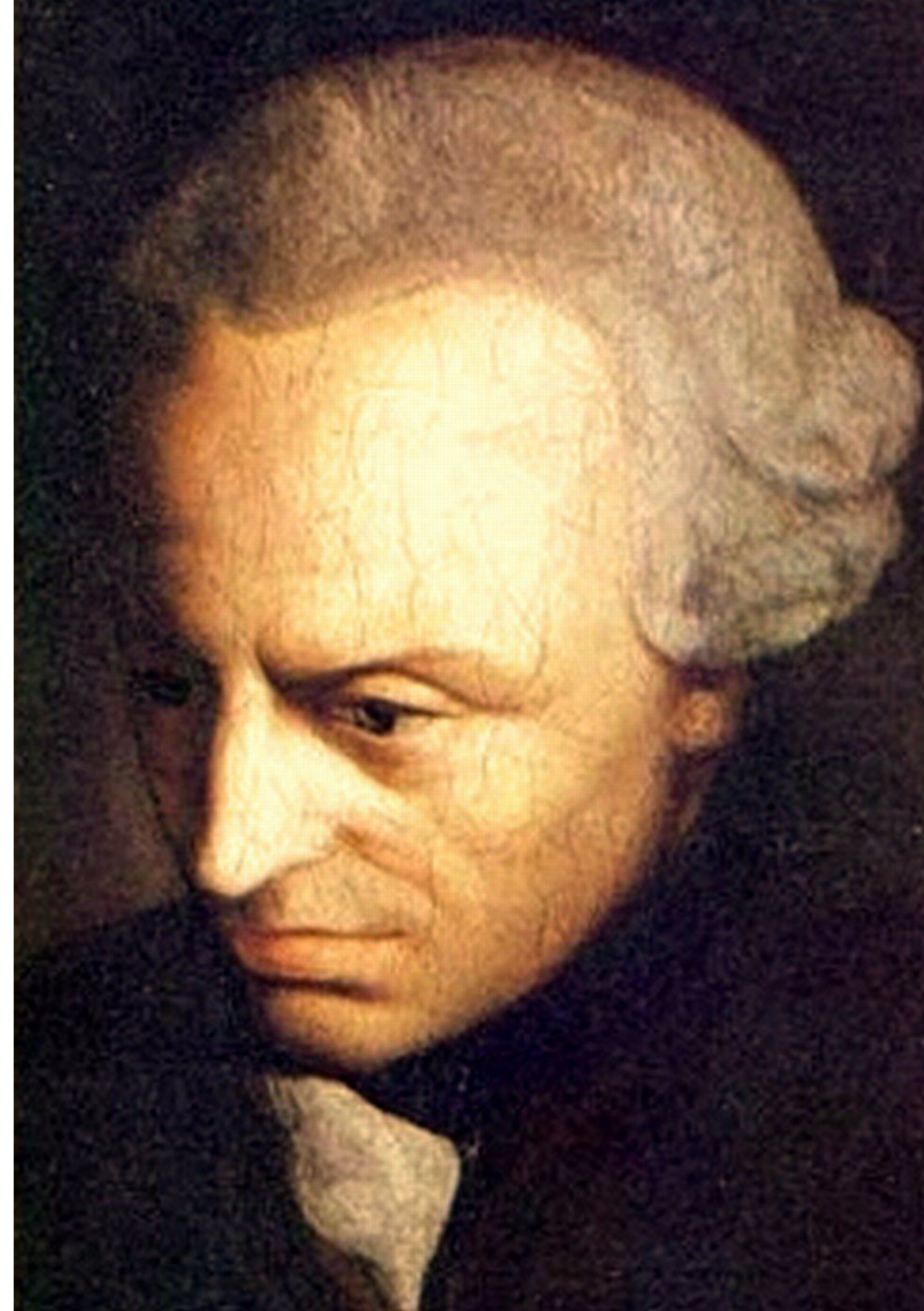
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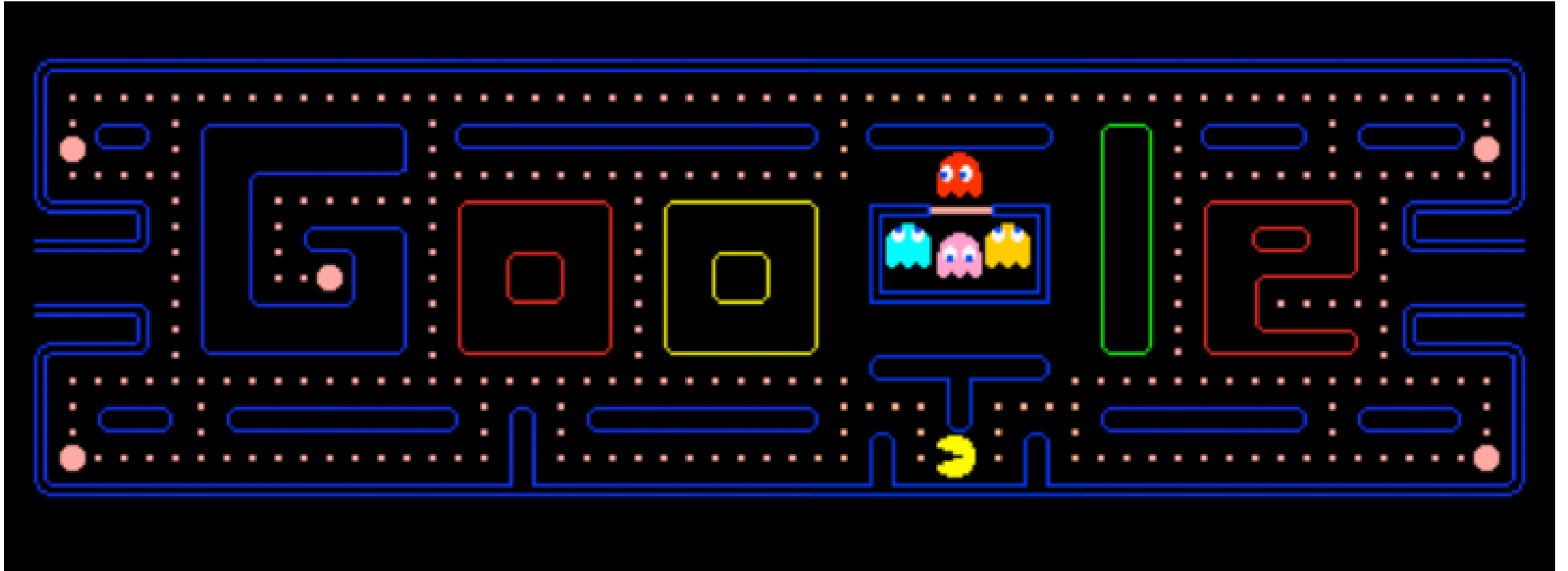
Decision: Workforce reduction with time to transition humanely.

Immanuel Kant



Consider...

Potential harm vs. potential good
for some set of stakeholders



4.8 million hours

\$120 – 298 million

Top Quality Attributes

- Availability
- Time-to-market
- Costs

Top Quality Attributes

- Availability
- Time-to-market
- Costs
- Environmental Sustainability
- Maintainability

“Framing Sustainability as a Property of Software Quality” by Patricia Lago, Sedef Akinli Koçak, Ivica Crnkovic, and Birgit Penzenstadler. published in Communication of the ACM, October 2015

Top Quality Attributes

- **Availability**
- Time-to-market
- Costs
- Environmental Sustainability
- Maintainability

Downtime harms customers

Do you compensate them?

Can customers afford the harm?

Top Quality Attributes

- Availability
- **Time-to-market**
- Costs
- Environmental Sustainability
- Maintainability

How much stress will you put on your team?

How much tension with maintainability can you bear?

Ethical Time-to-Market?

Source	Development team
Stimulus	Delivers increments of the software
Artifact	Development team
Response	Continues working for the company
Response Measure	At the same historical rate
Environment	Highly stressful / Overtime situation

Top Quality Attributes

- Availability
- Time-to-market
- **Costs**
- Environmental Sustainability
- Maintainability

Fair wages

Proper accounting

Proper procurement

In tension with
maintainability

Some Unethical Practices...

- Purposefully reduced wages by gender, nationality
- Outsourcing at less than fair prices
- Inaccurate hours reporting
- Violating open source licensing
- Knowingly shipping junk

Top Quality Attributes

- Availability
- Time-to-market
- Costs
- **Environmental Sustainability**
- Maintainability

What is the environmental impact of your software?

Environmental Sustainability

Source	Auto-scaling scripts
Stimulus	Detect signal for load increase
Artifact	Cloud / Services
Response	Increases capacity
Response Measure	Overall carbon output remains neutral
Environment	Peak load

Top Quality Attributes

- Availability
- Time-to-market
- Costs
- Environmental Sustainability
- **Maintainability**

Craftsmanship

Technical debt management

Documentation and communication



Maybe good communication is a moral imperative in software architecture!

- Who are your stakeholders?
- What can cause them harm?
- What can cause them potential good?
- Who is responsible for deciding?

See also: <http://www.acm.org/about-acm/acm-code-of-ethics-and-professional-conduct>

You have the power and
responsibility to do what is right.

Be excellent to each other!

Thank you!

Michael Keeling

IBM

@michaelkeeling

<http://neverletdown.net>

Check out Michael's book...



Coming soon to the
Pragmatic Bookshelf!



Filled with hands-on
exercises!



A practical guide to software
architecture design!

<http://bit.ly/swarch-design-book>