

The Perfect Fake: Art Meets Science

Sponsored By



In Partnership with:



Photo illustration by Brian Britigan from Reveal

IF 20% OF THE ART IN MUSEUMS* ARE FAKE, THINK ABOUT THE THINGS PEOPLE LIE ABOUT ON THEIR RESUMES.



Culture > Art > News

The Big Question: How many of the paintings in our public museums are fakes?

By Michael Glover | Friday 16 April 2010 00:00 |



A black and white photograph of Leonard Maltin, an older man with glasses, wearing a dark jacket over a collared shirt. He is standing with his hands on his hips, looking slightly to the right of the camera. The background is a plain, light-colored wall.

the case for

**MALTI
ROTHKO**

1



\$186 Million

2



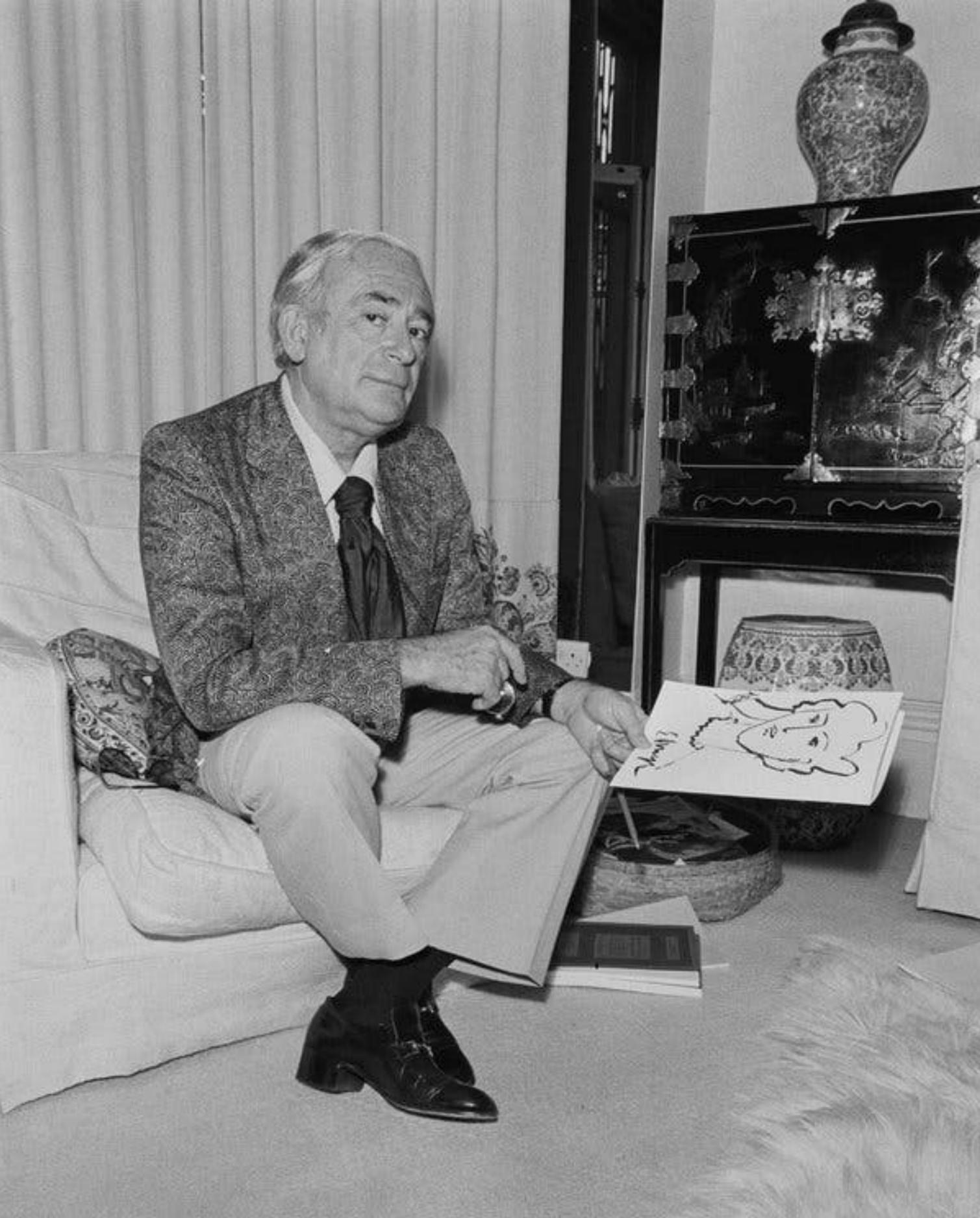
No. 6 (Violet, Green and Red), 1951 by Mark Rothko

FRAUD-OLOGY

The art of fraud and the science
behind uncovering it

CON-ARTIST

a person who cheats or tricks others by persuading them to believe something that is not true.



Portrait of a Woman, in the style of Francis Bacon, 1970. Oil on canvas. Collection of Mark Hogg.

This reproduction is not an authorized or sanctioned copy of the original work and is not intended to be used as a substitute for the original work. The artist's name and signature are not visible on this reproduction.

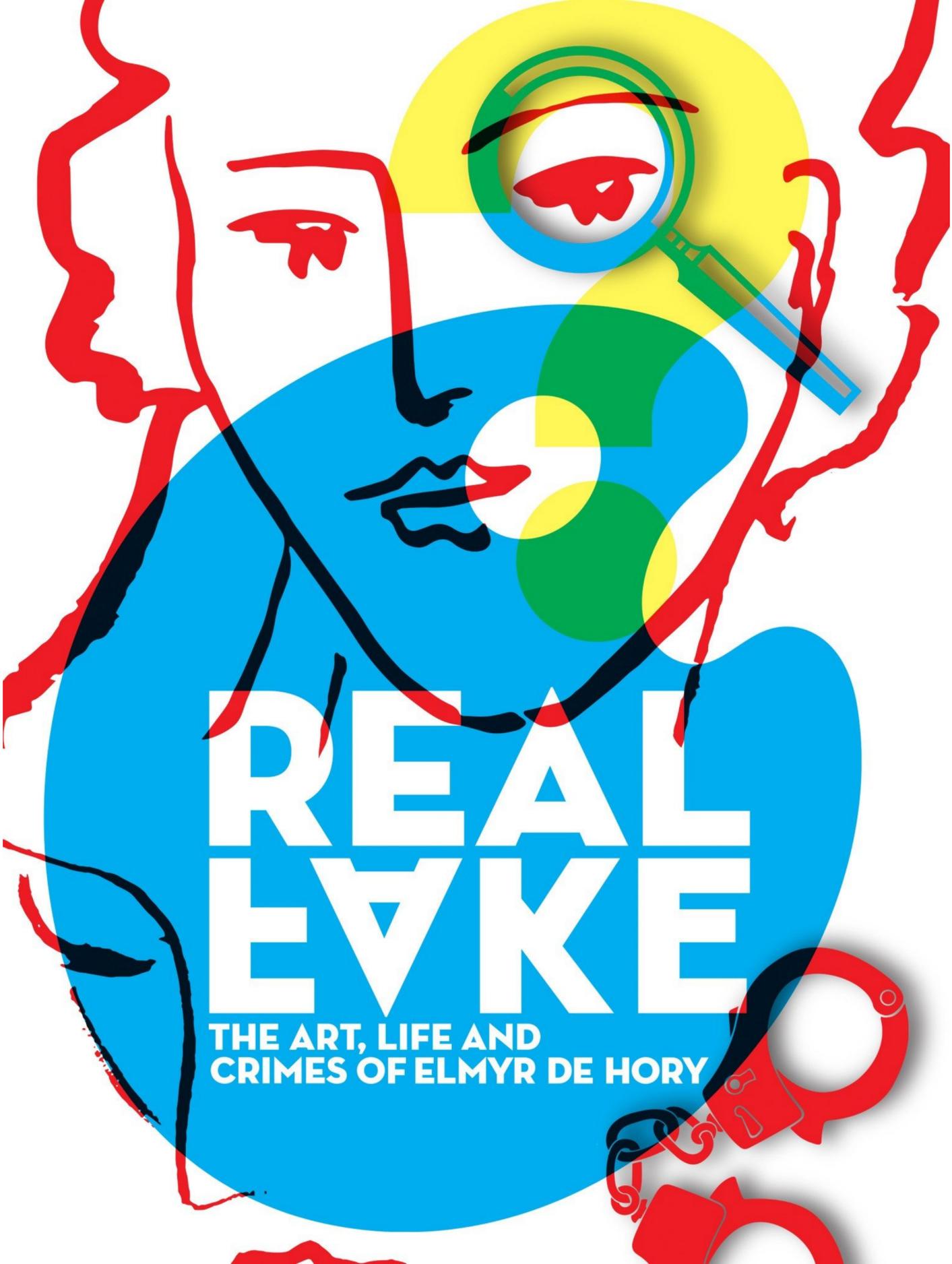
Mark Hogg

Elmyr de Hory

Artist and Faker

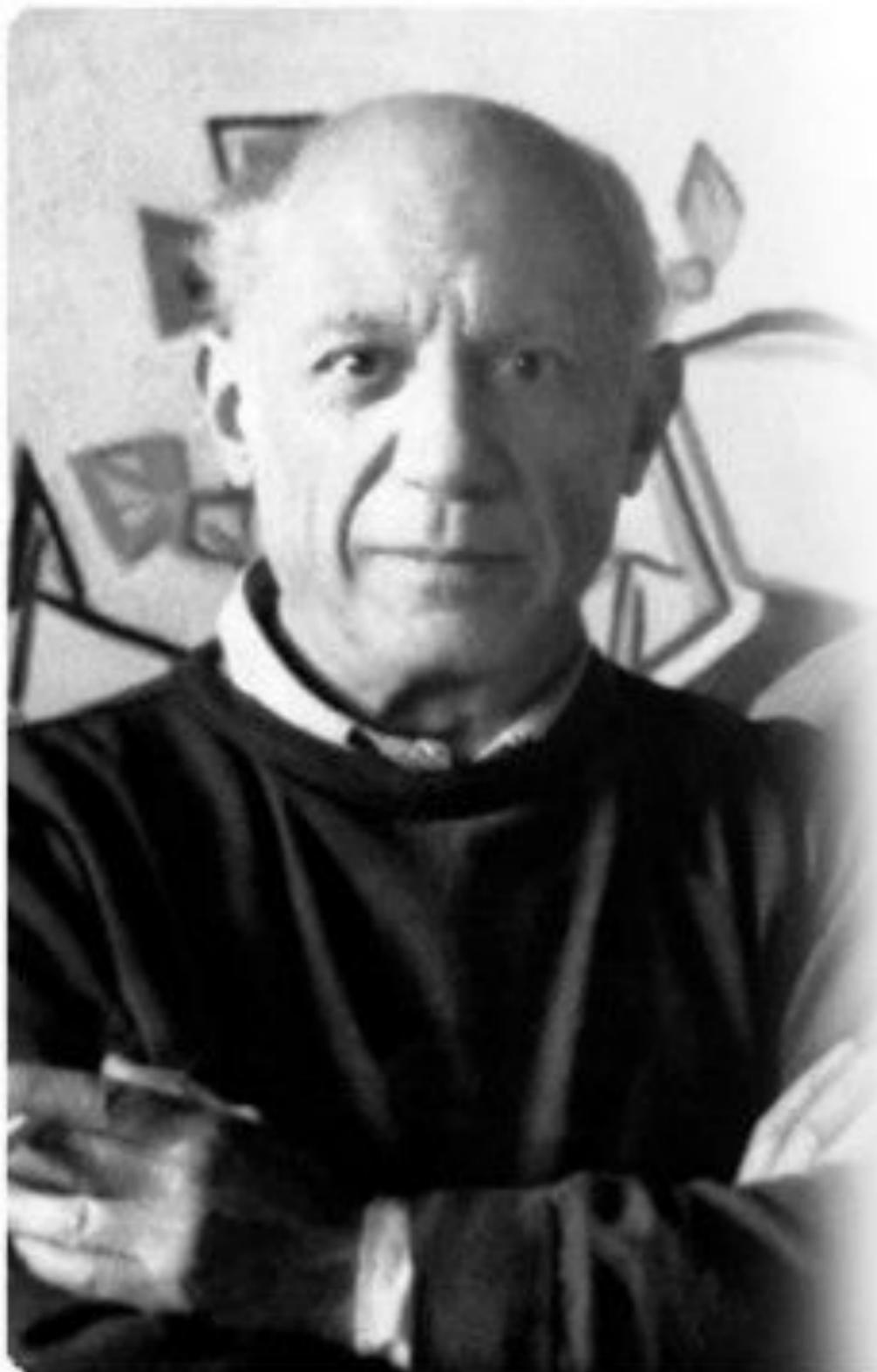
February 15, 2010
through April 18, 2010

Supported by
the Carl and Verna Schmidt Foundation



REAL EVKE

THE ART, LIFE AND
CRIMES OF ELMYR DE HORY



"Good artists copy,
great artists steal."

- Pablo Picasso

vantucker.me

A watercolor palette with various colors (red, yellow, blue, green, purple, black) is positioned at the top. Below it, a piece of paper shows a watercolor wash in shades of pink, orange, and yellow. To the left, a fan brush with a gold ferrule and black handle is visible. To the right, three fine-tipped brushes with black handles and gold ferrules are laid out. The background is a light-colored wooden surface.

Forgery: a genuine document that has been unlawfully altered or produced

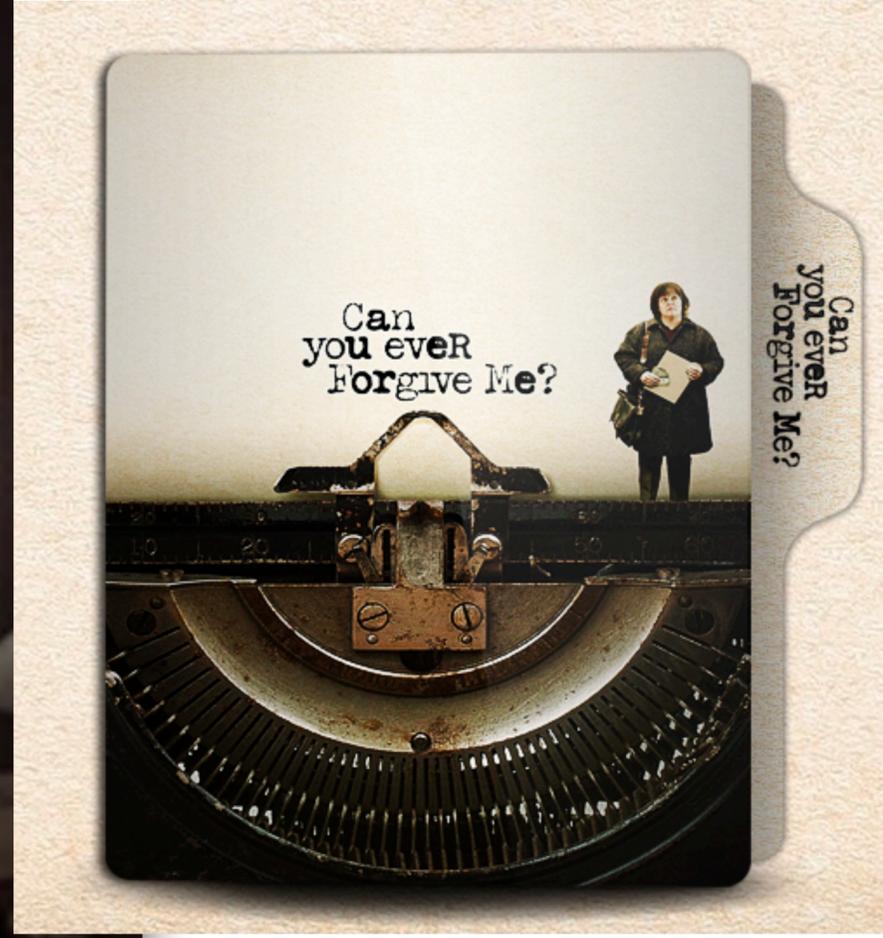
Counterfeit: a copy of a genuine document

Fake: an identity document that isn't officially produced or recognised



**FACT:
LEE ISRAEL STOLE,
ALTERED, OR
FORGED MORE
THAN 400 LETTERS**

HISTORY **V**SHOLLYWOOD.COM - CAN YOU EVER FORGIVE ME?



REAL

FAKKE

A woman with long dark hair, seen from behind, looking at a wall of small framed pictures. The text is overlaid on the image.

Art is meant
to disturb,
science reassures.

Georges Braque



Investigating Undiscovered Art Masterpiece



Small white label with faint text, possibly a brand or date.

X 9101

of 7
"Lady with dogs on Beach"
oil painting by
L.S. LOWRY
THE LEFEVRE GALLERY
(L.S. LOWRY & COMPANY, LTD.)
25 BRUTON STREET, LONDON, W1X 4AD
PAINTING AND FRAMING



I am a simple man and I
use simple materials: Ivory
Black, Vermilion, Prussian
Blue, Yellow Ochre, Flake
White and no medium.
That's all I've ever used in
my paintings.

L. S. Lowry

LA DOMENICA DEL CORRIERE

NEL REGNO ESTERO
 Anno L. 5 - L. 10 -
 Semestre » 2,50 » 5 -

Si pubblica a Milano ogni Domenica
 Supplemento illustrato del "Corriere della Sera",

Uffici del giornale:
 Via Solferino, N. 28
 MILANO

Per tutti gli articoli e illustrazioni è riservata la proprietà artistica e letteraria, secondo le leggi e i trattati internazionali.

Anno XIII. - N. 36. 3 - 10 Settembre 1911. Centesimi 10 al numero.

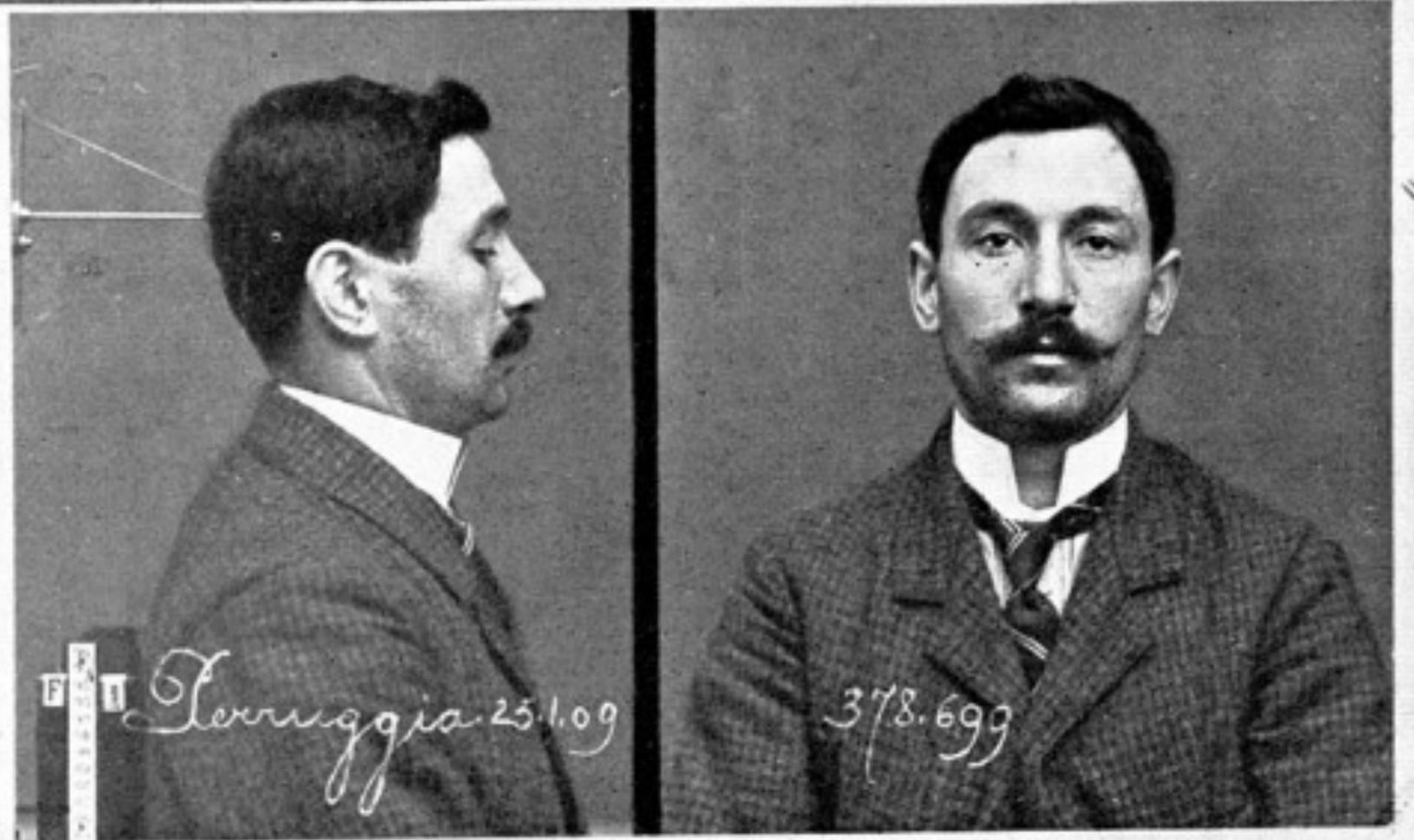


Come sia stato possibile l'impossibile, cioè il furto dal Louvre del ritratto di Monna Lisa del Giocondo, di Leonardo.
 (Disegno di A. Beltrame).

Age app^é Age déclaré 4 . N^o en. 18 22

Taille 1 ^m <u>61.4</u>	Tête	long ^r <u>17.7</u>	Pied g. <u>25.3</u>	Coulr de l'iris g.	n ^o de cl. <u>5-4</u>	Cheveux <u>ch.</u>
Voûte		larg ^r <u>15.1</u>	Médius g. <u>14.0</u>		aur ^{is} <u>c. var. cl.</u>	Barbe <u>ch. r. m.</u>
Enverg. 1 ^m <u>61</u>		zyg ^{es} <u>13.2</u>	Auric ^{es} g. <u>8.5</u>		pér ^{is} <u>ard. t. f.</u>	Teint Pos. <u>m. S. m.</u>
Buste 0 ^m <u>47.8</u>		Oreille dr. <u>6.6</u>	Coudée g. <u>43.1</u>		part ^{es}	Main dr.
					Main g.	

(Point de vue : 2^m - Réduction 1/7)



Dressé à Paris, le 25.1.1909, par M. Lagrange





THE ART OF THE STEAL

Filtering Data



Test says you don't have it

Test says you do have it

You really don't have it

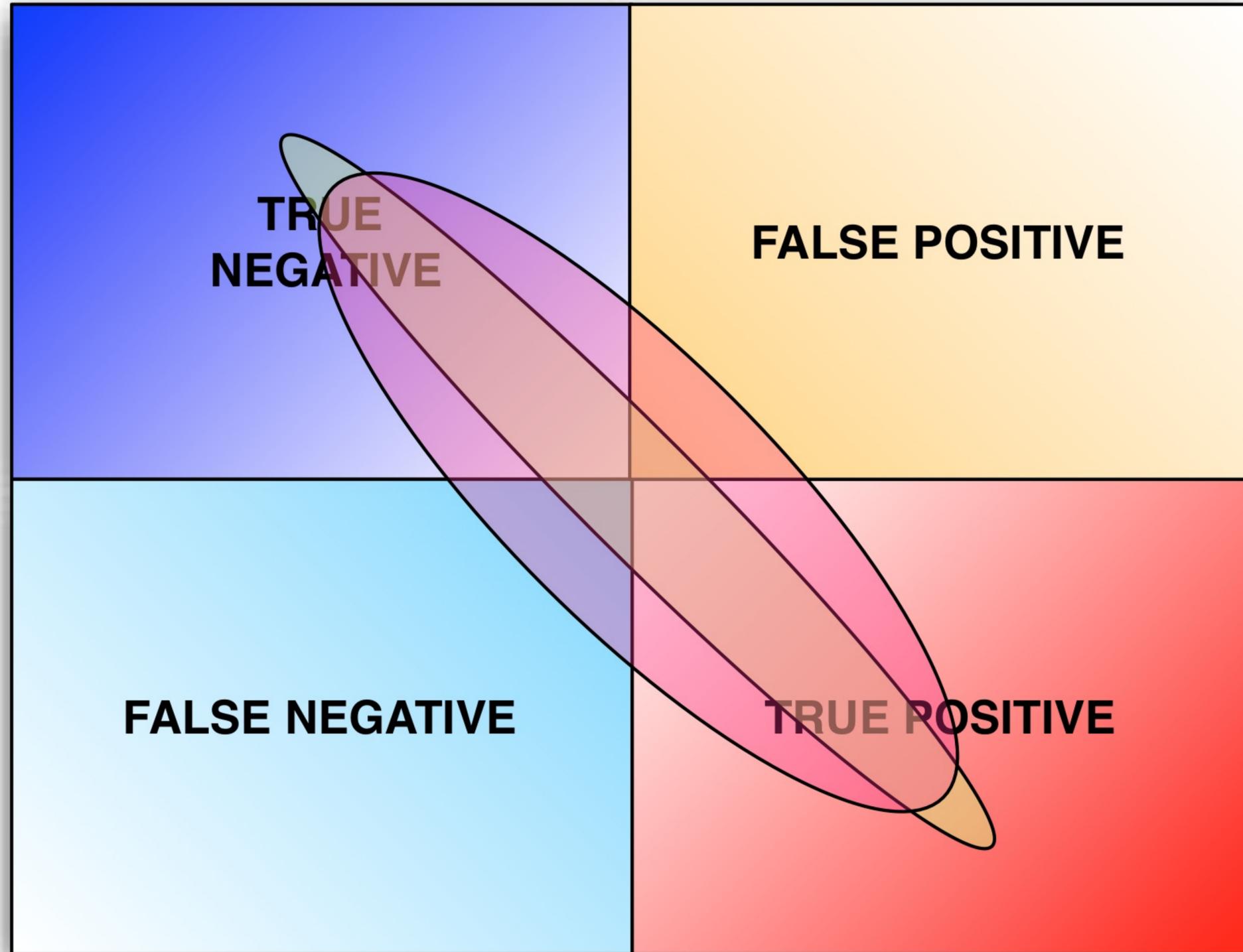
TRUE
NEGATIVE

FALSE POSITIVE

You really do have it

FALSE NEGATIVE

TRUE POSITIVE





Fake



Original



Join Extra Crunch

To fight fraud, Amazon now screens third-party sellers through video calls

Sarah Perez @sarahintampa / 8:47 pm +04 • April 27, 2020

 Comment



 Image Credits: Beata Zawrzal/NurPhoto / Getty Images





V A F O R W A R D

The Sun.

MONDAY, SEPTEMBER 16, 1878.

EDISON'S NEWEST MARVEL.

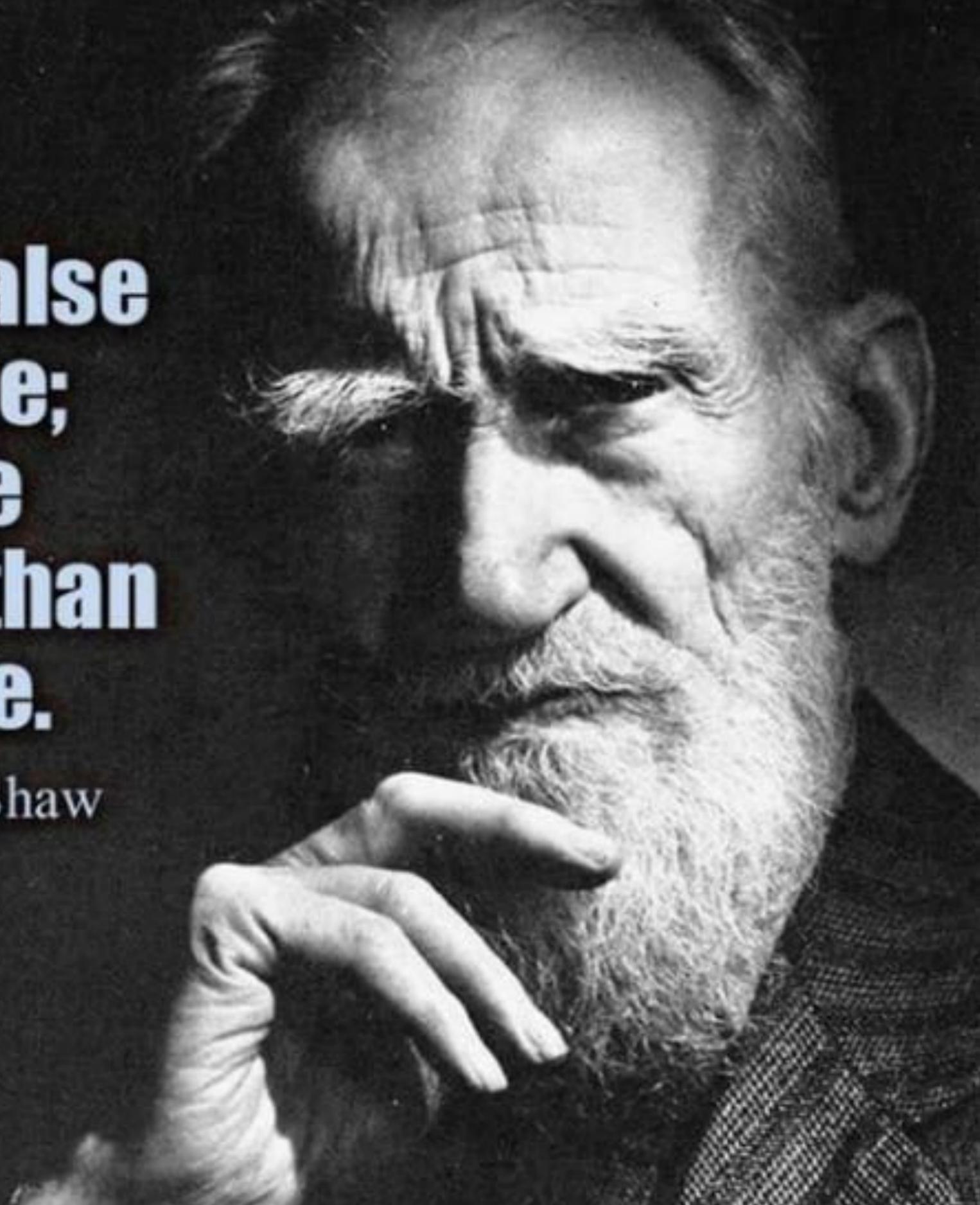
*SENDING CHEAP LIGHT, HEAT, AND
POWER BY ELECTRICITY.*

**Illuminating Gas to be Superseded—Edison
Solving the Problem of Dividing the Too
Great Brilliance from an Electric Machine.**

Mr. Edison says that he has discovered how to make electricity a cheap and practicable substitute for illuminating gas. Many scientific men have worked assiduously in that direction, but with little success. A powerful electric light

**Beware of false
knowledge;
it is more
dangerous than
ignorance.**

- George Bernard Shaw

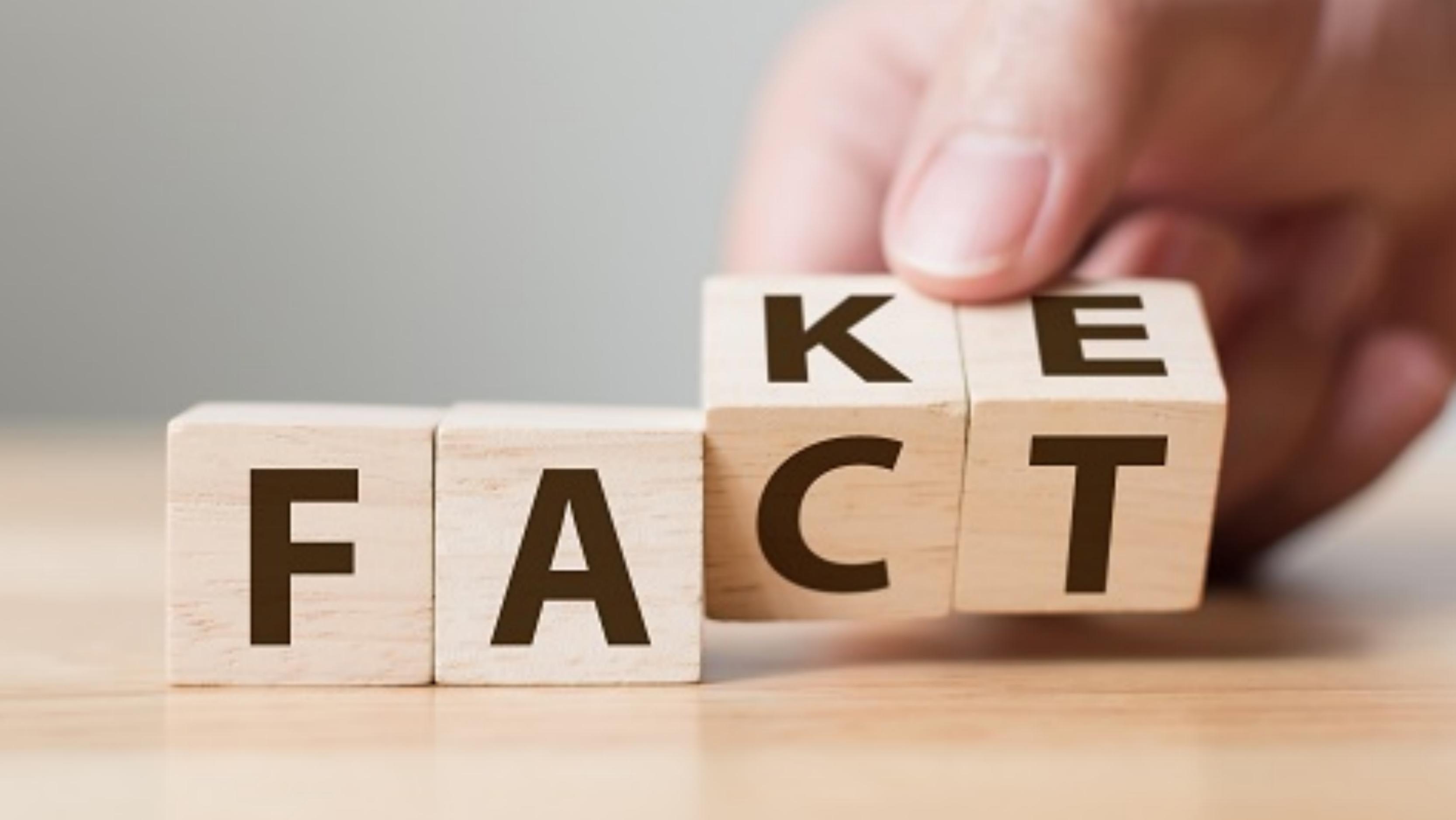




DON'T TRUST
EVERYTHING YOU SEE

EVEN SALT LOOKS
LIKE SUGAR



A close-up photograph of a hand flipping a wooden block. The block is currently showing the letter 'K' on top and 'E' on the side. The word 'FAKE' is formed by four wooden blocks: 'F', 'A', 'K', and 'E'. The 'K' block is being flipped to reveal the letter 'A' on its bottom face. The word 'FACT' is visible on the front of the blocks.

F **A** **K** **E**
F **A** **C** **T**

› Solution Overview



With SAS® Financial Crimes Suite, you can ...

- **Better understand your overall exposure.** Develop comprehensive, cross-channel customer risk profiles using entity link analysis to identify complex patterns of behavior and suspicious associations among customers, accounts or other entities.
- **Fight financial crime more effectively and efficiently.** Monitor more transactions and risks in less time with a system that integrates anti-fraud and anti-money laundering processes, and can run multiple scenarios and risk factors simultaneously.
- **Reduce false positives.** Only SAS uses predictive alert analytics to significantly reduce false positives by automating decisions and scoring risk to more accurately identify the greatest threats before beginning an investigation.
- **Foster collaboration among fraud and AML teams.** Centralized case management, a common repository for cross-channel data and shared workflow tools facilitate information sharing while reducing administrative costs.

SAS® Financial Crimes Suite

An enterprise approach for a unified defense against financial crime

Overview

Financial crime has been growing steadily, and multiple factors are to blame - global economic uncertainty, growth in organized crime, the relative anonymity of online and mobile commerce, etc. Most organizations take a fragmented approach to combating financial crime, with different departments using a variety of tools to work their own cases. Activity that spans departments and channels can easily be missed, leaving organizations vulnerable to even more attacks, as criminals constantly look for - and find - any weaknesses in a company's defenses. SAS can help.

SAS Financial Crimes Suite offers a common analytics platform and module-based solutions that provide solid protection against losses resulting from financial crimes by increasing the effectiveness and efficiency of detection and prevention efforts.

How SAS® Can Help

SAS Financial Crimes Suite uses a common technology platform and a flexible approach to implementation that lets you add on solutions when needed, while reducing implementation time. This approach gives you a more efficient and cost-effective means of managing multiple business objectives while generating highly accurate results. With SAS Financial Crimes Suite, you get:

- **High-performance anti-money laundering.** Supercharged scenario tuning and what-if analysis reduce the time needed for scenario analyses from hours to just minutes, so investigators can more quickly identify and focus efforts on the most critical cases.
- **Configurable alert management.** A configurable alert management hub unifies several solutions for a holistic view of work items, giving investigators a well-informed and efficient triage for more timely risk mitigation.
- **Dashboard reporting.** Analysts, investigators and managers can focus on and continually monitor key performance indicators in their specific areas of interest using the suite's dashboard reporting capabilities.
- **Cross-channel visibility.** Entity link analysis offers cross-channel visibility and serves as common ground for information sharing and collaboration. You can develop comprehensive customer risk profiles, uncover previously unknown collusive activity, and better understand your overall exposure.

A Hybrid Analytic Approach

Because no single method is foolproof, SAS takes a hybrid analytic approach that uses superior detection methods based on multiple analytic techniques for greater accuracy and better predictive performance. These advanced detection capabilities include:

- Business rules for automatically flagging suspicious activities.
- Near-real-time transaction monitoring.
- Anomaly detection for uncovering abnormal patterns of behavior.
- Predictive modeling for identifying new or emerging threats based on previous threats.
- Network analysis for linking multiple parties through associative behavior or common ownership.
- Adaptive segmentation with advanced neural networks.

By using this multifaceted approach to analyze your data, you can more easily connect the dots between seemingly unrelated events, reveal hidden relationships that you may otherwise miss and spot suspicious activities early in their life cycles.

Entity Linking

Entity linking through network analysis helps investigators identify behavior patterns among customers, accounts or other entities that only appear suspicious when viewed in a larger context across a community of related accounts or entities. Network analysis goes beyond transaction and customer views to analyze activities and relationships within a network of related entities, such as customers who share demographic data or transactions.

Correspondent Banking Scenarios

A banking-specific data model includes correspondent banking scenarios to further strengthen detection methods in the high-risk category of correspondent banking. A relationship grid enables investigators to quickly assess details associated with correspondent banking alerts and the entities connected with them.

Peer Group Anomaly Detection

Peer group anomaly detection - which compares an entity's behavior to its historical behavior, as well as the behavior of its peers - is also included. Multiple peer groups are supported, and the analytics provide outlier detection both above and below expected behavior.

Customer Due Diligence

Support for customer due diligence enables you to rate new customers and update existing customer scores in three primary categories - entity, geography and product type - based on key events that could affect the overall risk of the relationship. Customer profiles are reviewed systematically, and relevant parties within the bank are notified immediately if there are any changes.

High-Performance Analytics

Big data pouring in from both structured and unstructured sources can significantly hinder efforts to access relevant data quickly - and that increases the chance that critical information may be missed. SAS High-Performance Analytics extracts accurate insights from big data in shorter reporting windows, enabling greater collaboration and more efficient, effective investigations.

By applying sophisticated analytic techniques to *all* relevant data - not just a sample - you can detect previously unseen patterns, sentiments and relationships that may indicate suspicious activity far enough in advance to take decisive action to prevent or mitigate an undesirable outcome.

Array processing lets you monitor multiple risks during a single pass of the data. You can also add numerous scenarios with little to no impact on processing time.

Challenges

- **Growing volume of threats.** Financial crimes are on the rise, making it difficult to overcome the associated information overload.
- **Technology limitations.** Current systems do not support robust analytical modeling, making it practically impossible to process and analyze information fast enough to make a difference.
- **Siloed systems and processes.** Detecting suspicious activity across the enterprise is especially difficult when different departments do not share the same data sources or processes.
- **Hindsight versus foresight.** Business rules capture hindsight, not foresight; they are unable to detect emerging patterns of fraud and money laundering, and can miss crimes concealed in complex layering of transactions across channels, products and accounts.
- **Limited resources.** There aren't enough resources available to investigate all suspicious activity, so many threats may go unaddressed. And shrinking budgets make adding resources - human or technological - highly unlikely.

The SAS® Difference

- **An enterprise approach.** A single analytics platform lets you analyze all cross-channel enterprise data for seamless protection against financial crimes and regulatory noncompliance.
- **Industry-leading analytics.** For nearly four decades, SAS has been the undisputed leader in business analytics, enabling organizations all over the world to obtain the best results, discover new insights and make confident, fact-based decisions – no matter how big the data nor how complex the analysis.
- **A better customer experience with fewer false positives.** Our patented signature approach lets you link and simultaneously monitor multiple accounts and programs of any type belonging to the same customer. False positives can be reduced by up to 76 percent, so there's no need to sacrifice the customer experience for the sake of fraud detection.
- **Excellence in high-performance analytics.** SAS can handle your most difficult challenges and generate high-impact insights. We built our high-performance analytics with analytical workloads in mind so you can solve even the most complex problems quickly.
- **Constant vigilance.** We have Centers of Excellence around the world staffed with experts in fraud, compliance and advanced analytics, across all industry sectors. By partnering with us, you'll stay on top of the latest technology developments and evolving fraud trends.
- **Flexible implementation.** A common technology foundation and modular solutions mean that you can start where your needs are greatest and add on as needed. Multiple deployment options, infused with best practices from hundreds of successful implementations, minimize your capital investment and simplify IT operations, while getting you up and running fast.

Enterprise Data Management

An enterprise approach to data management and consolidation ensures that your data is consistent, accurate and timely. Data integration, data quality and master data management are all combined in a unified environment that brings together cross-channel enterprise data – from all lines of business, organizational units and geographic regions – on a single platform.

Flexible Alert Management

A flexible alert management interface offers configurable access to multiple solutions. Users with the proper security permissions can access their customer due diligence, currency transaction reporting, case management and AML solutions – all from the same interface.

You can assemble alerts from multiple monitoring systems, associate them with common individuals or entities, and automatically prioritize and route suspicious cases based on the level of risk they pose.

In addition, the interface enables faster disposition of cases by enabling the efficient review of work items sent electronically to the system prior to creating or linking incidents to a case.

Centralized Case Management

SAS gives investigators the power, flexibility and task automation needed to streamline processes and improve the efficiency and effectiveness of investigations. With centralized case management capabilities, you can:

- Create multiple automated workflows for different types of cases – fraud, money laundering, etc.
- Include to-do lists, and make certain action items mandatory prior to routing the case to the next step in the workflow.
- Attach comments or documentation relevant to a case.

All information related to a case is captured and tracked through a central audit service, which enables easy auditing of the investigation process. And all information pertaining to investigations is searchable via a single search field.

To contact your local SAS office, please visit: sas.com/offices

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies.
Copyright © 2014, SAS Institute Inc. All rights reserved. 106022_S120552.0314

