

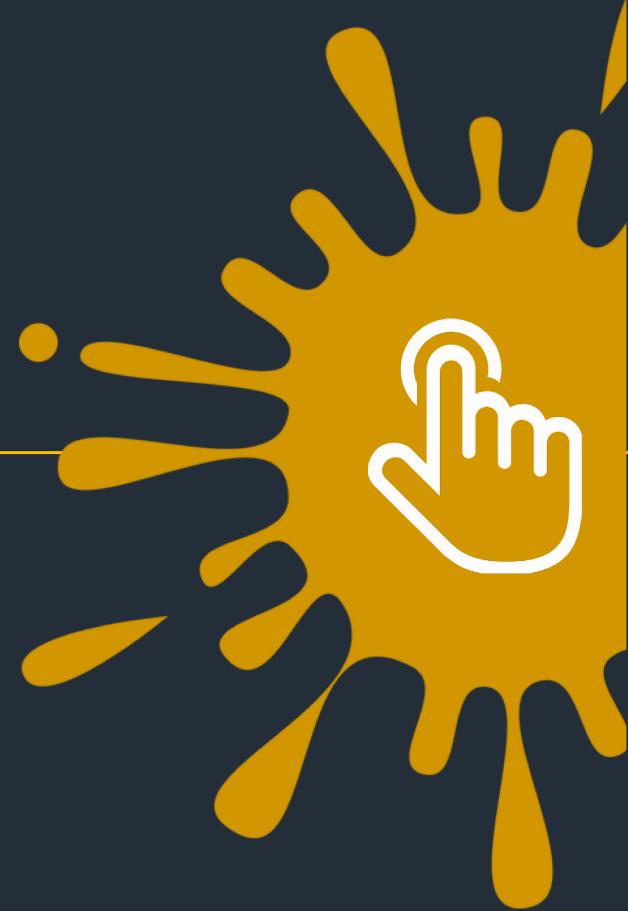


APRIL 23<sup>RD</sup> - 2020

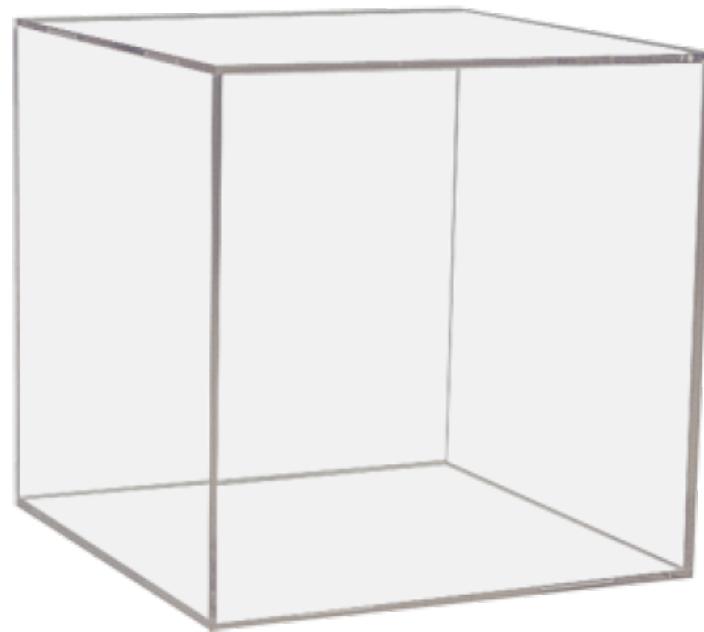
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# Dirty Clicks: A Study of the Usability and Security Implications of Click-related Behaviors on the Web

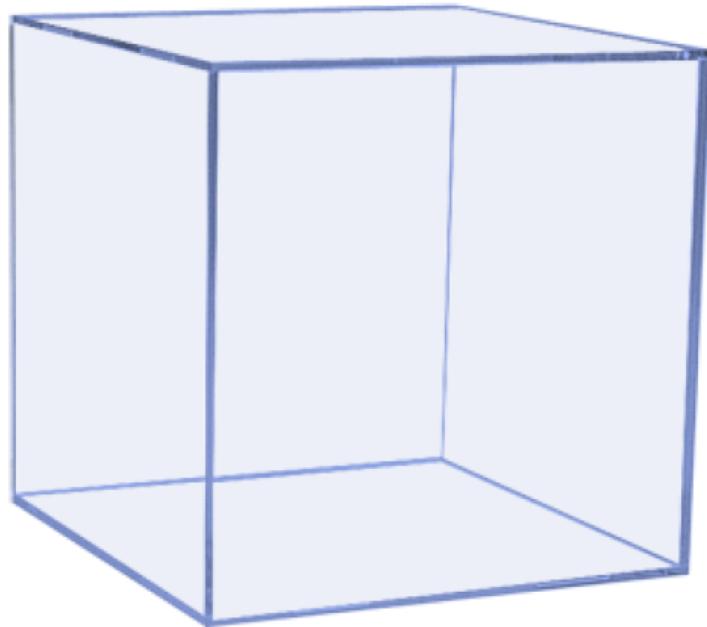
Iskander Sanchez-Rola, Davide Balzarotti, Christopher Kruegel,  
Giovanni Vigna, and Igor Santos



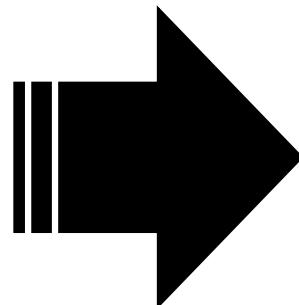
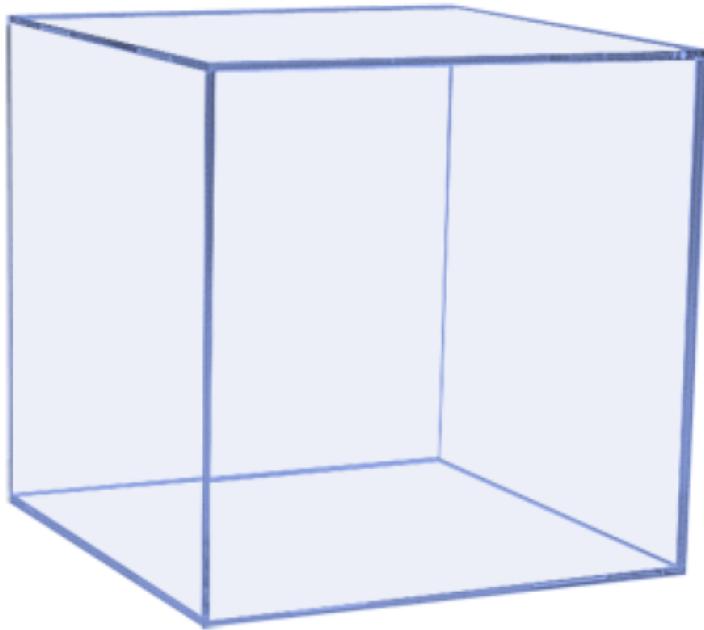
# Motivation



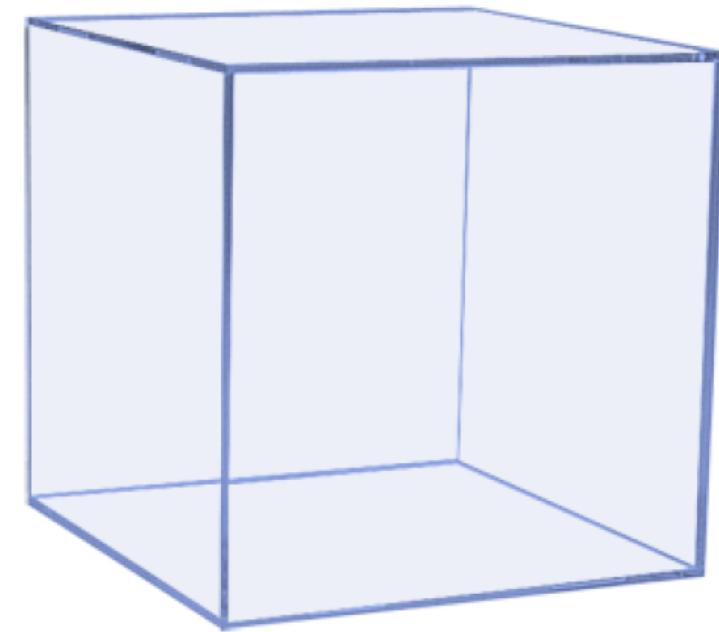
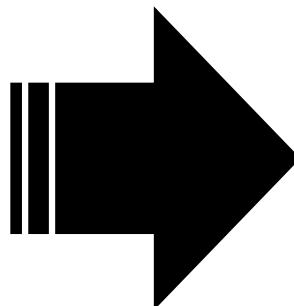
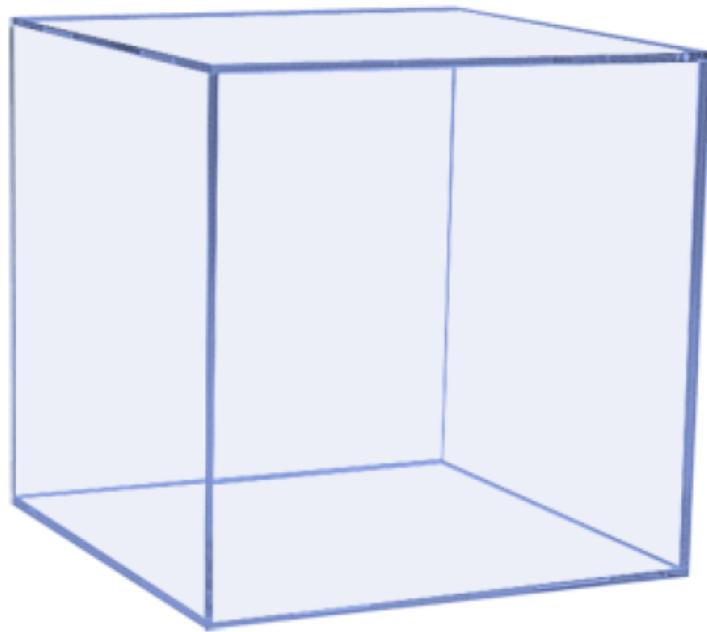
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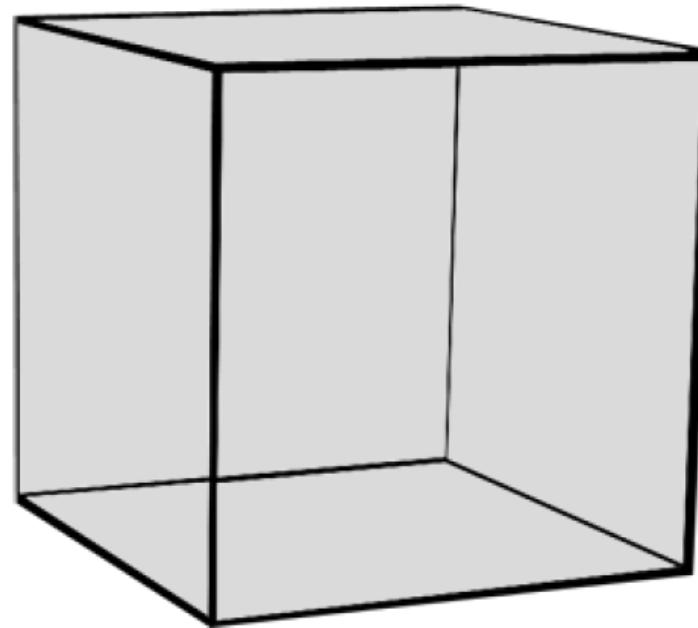
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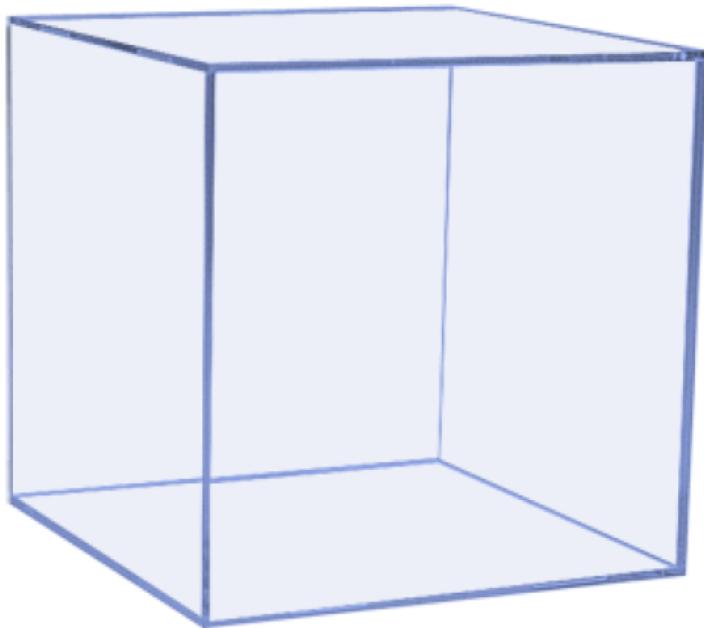
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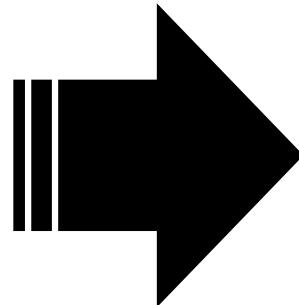
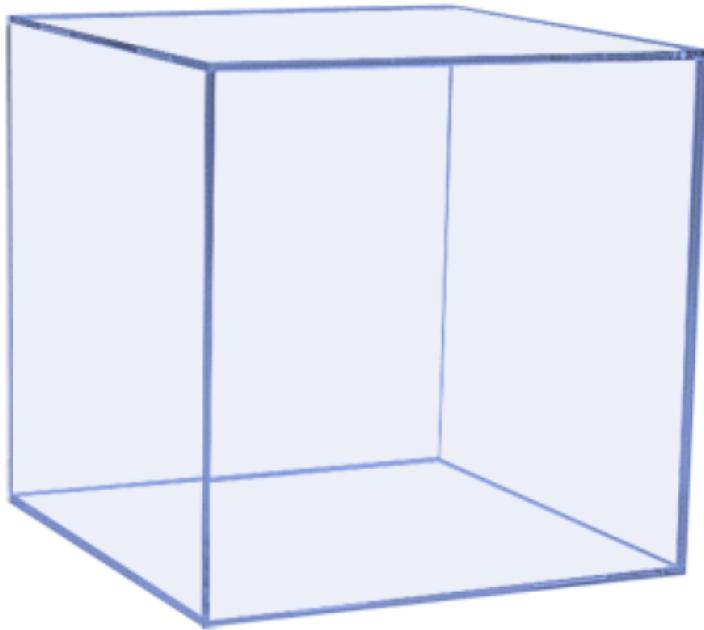
# Motivation



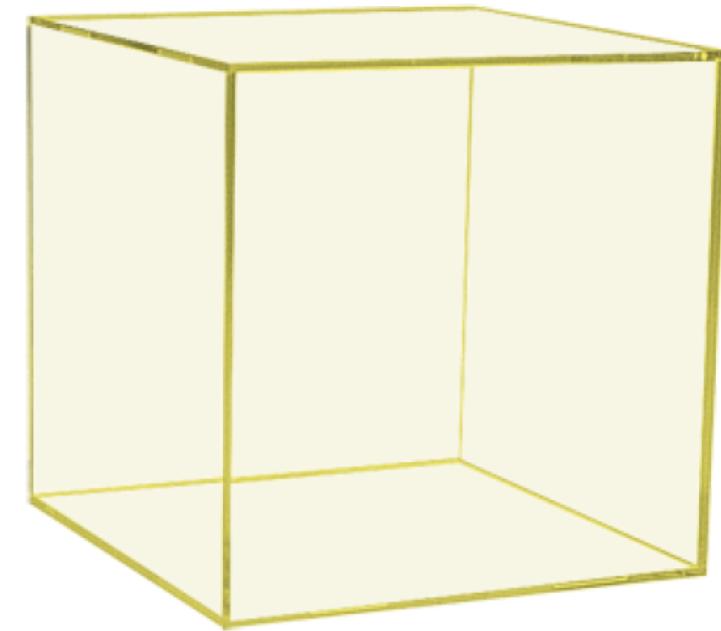
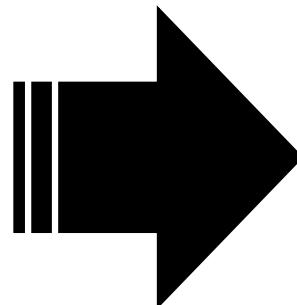
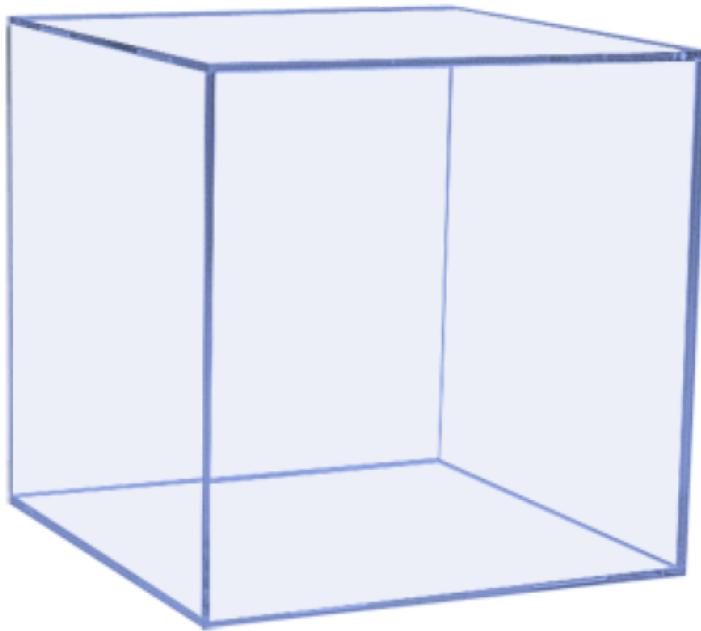
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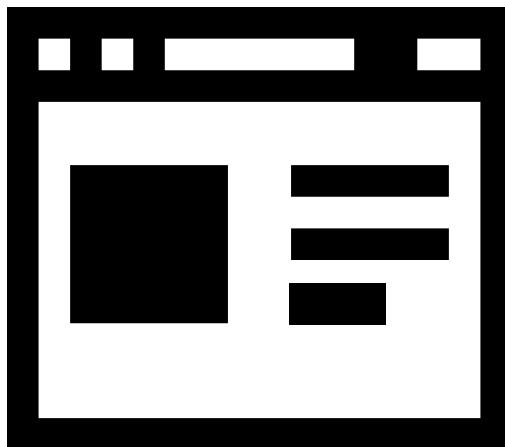
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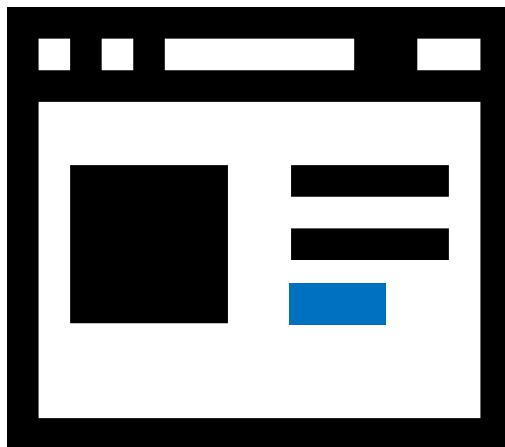
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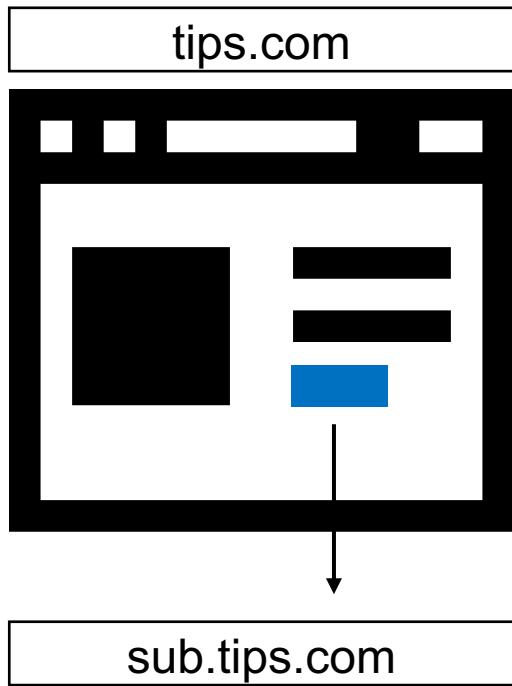


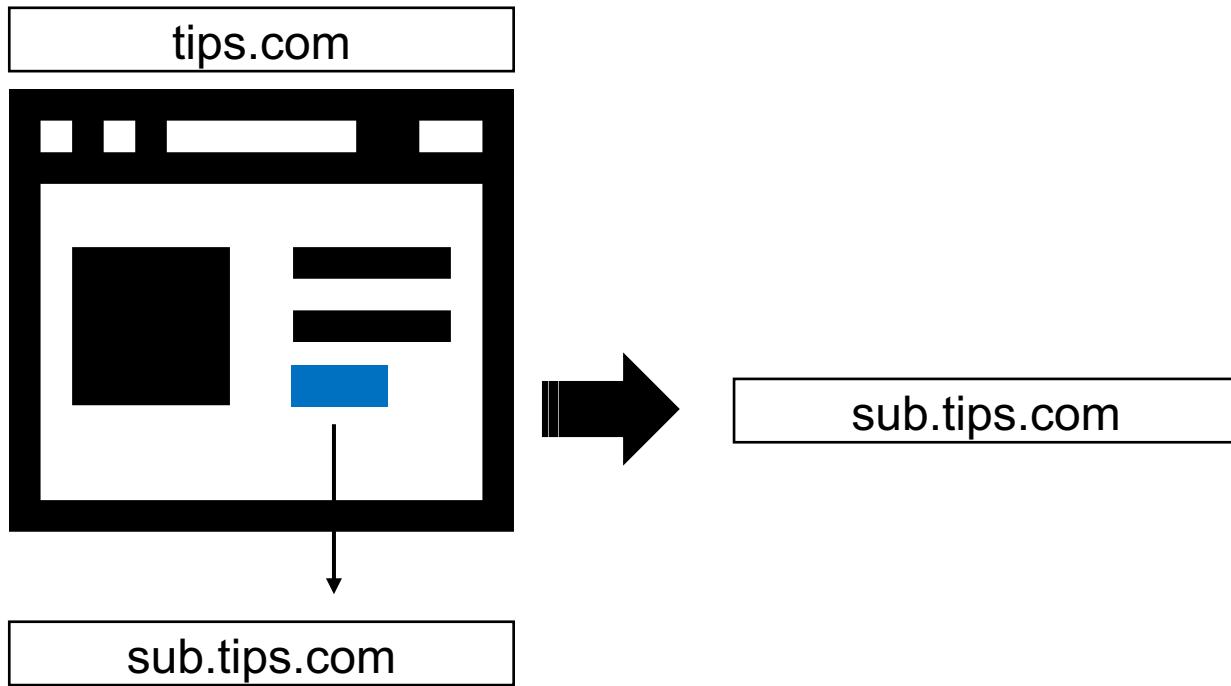
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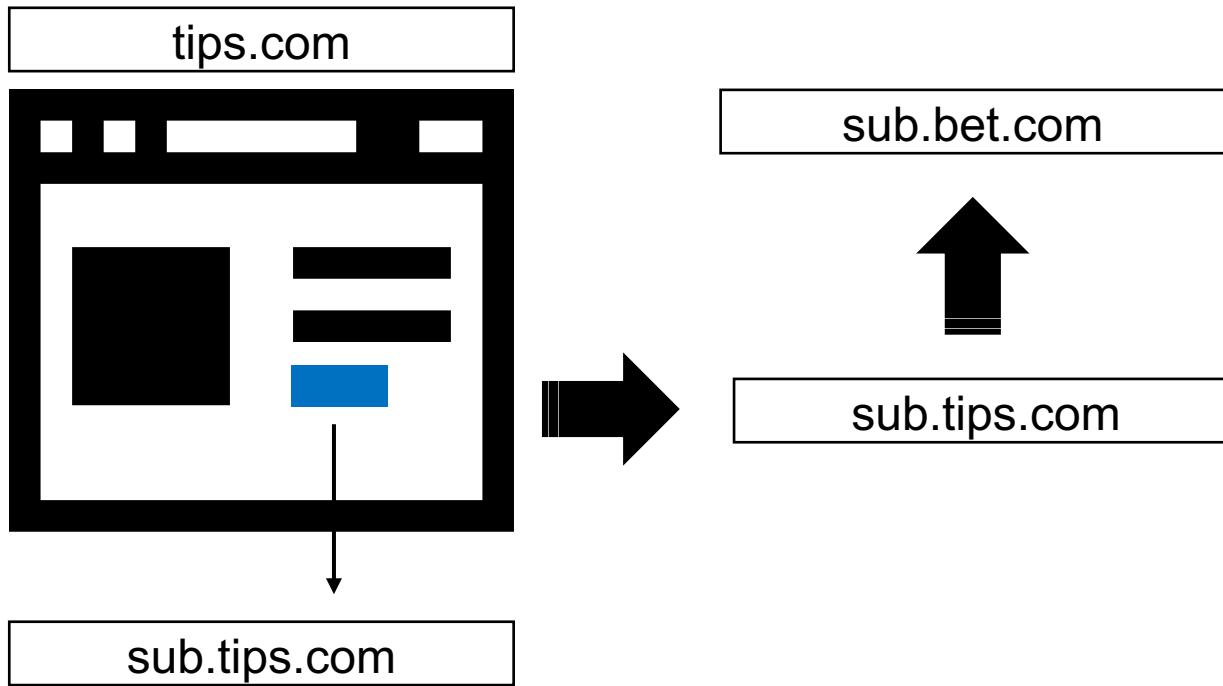


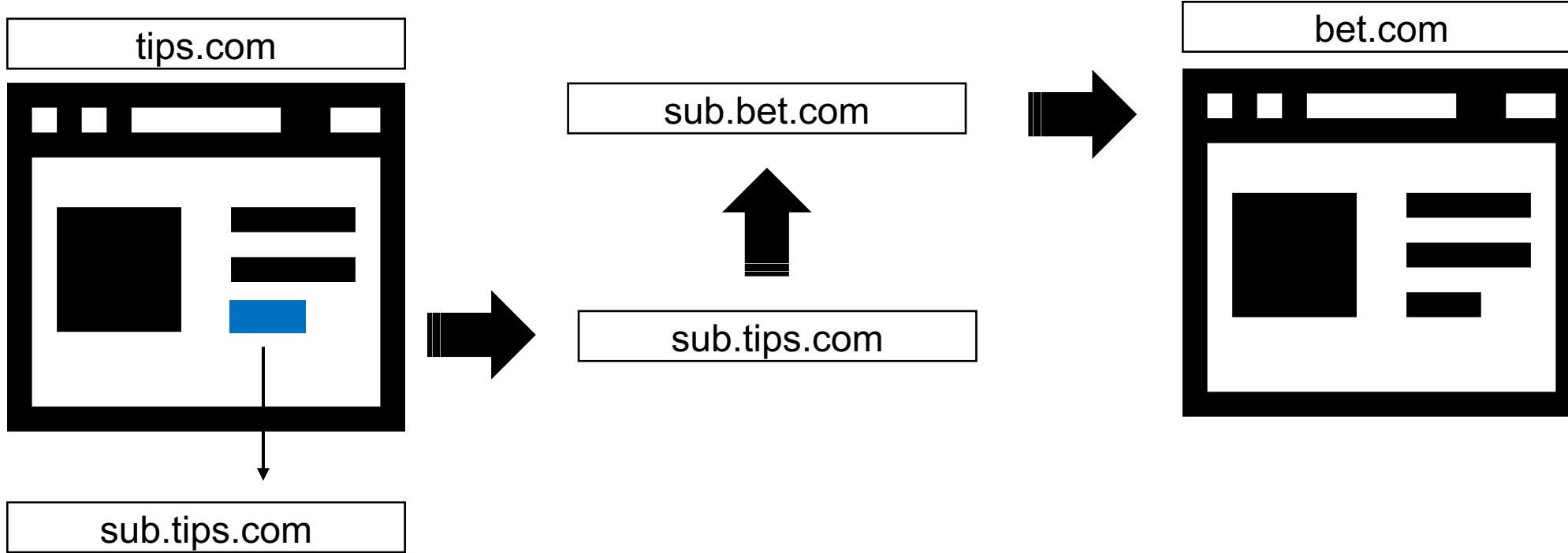
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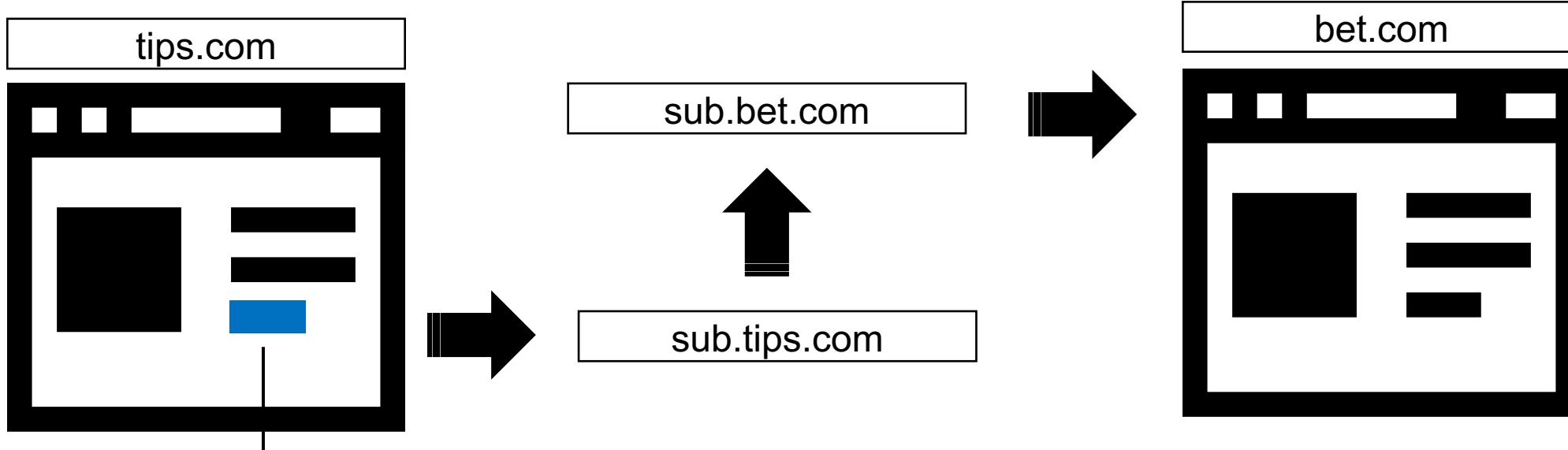


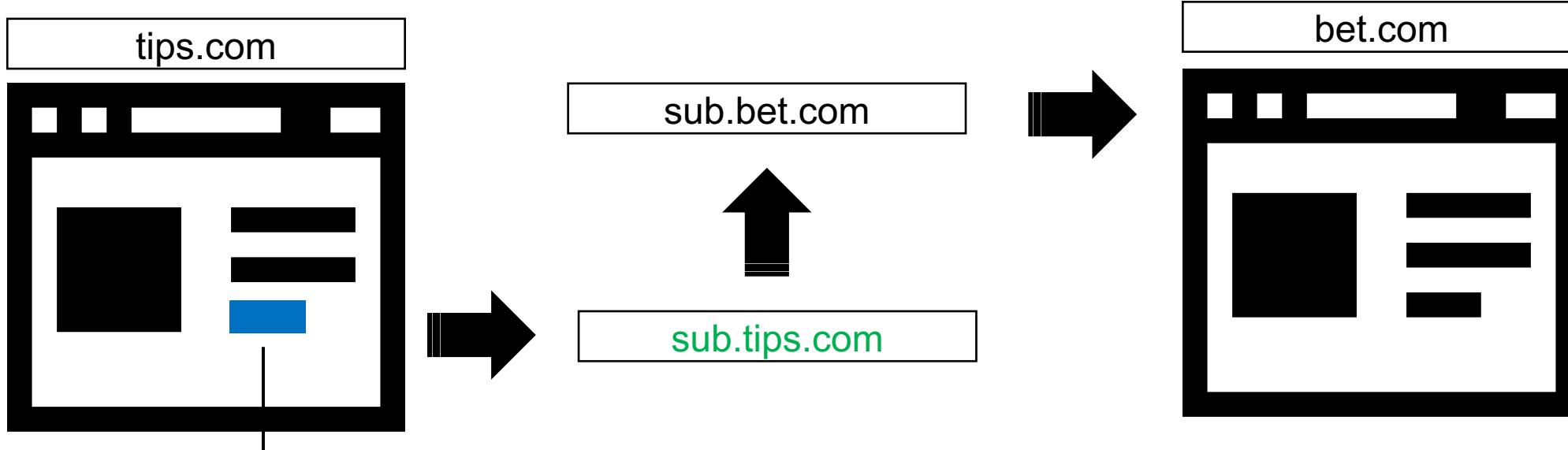


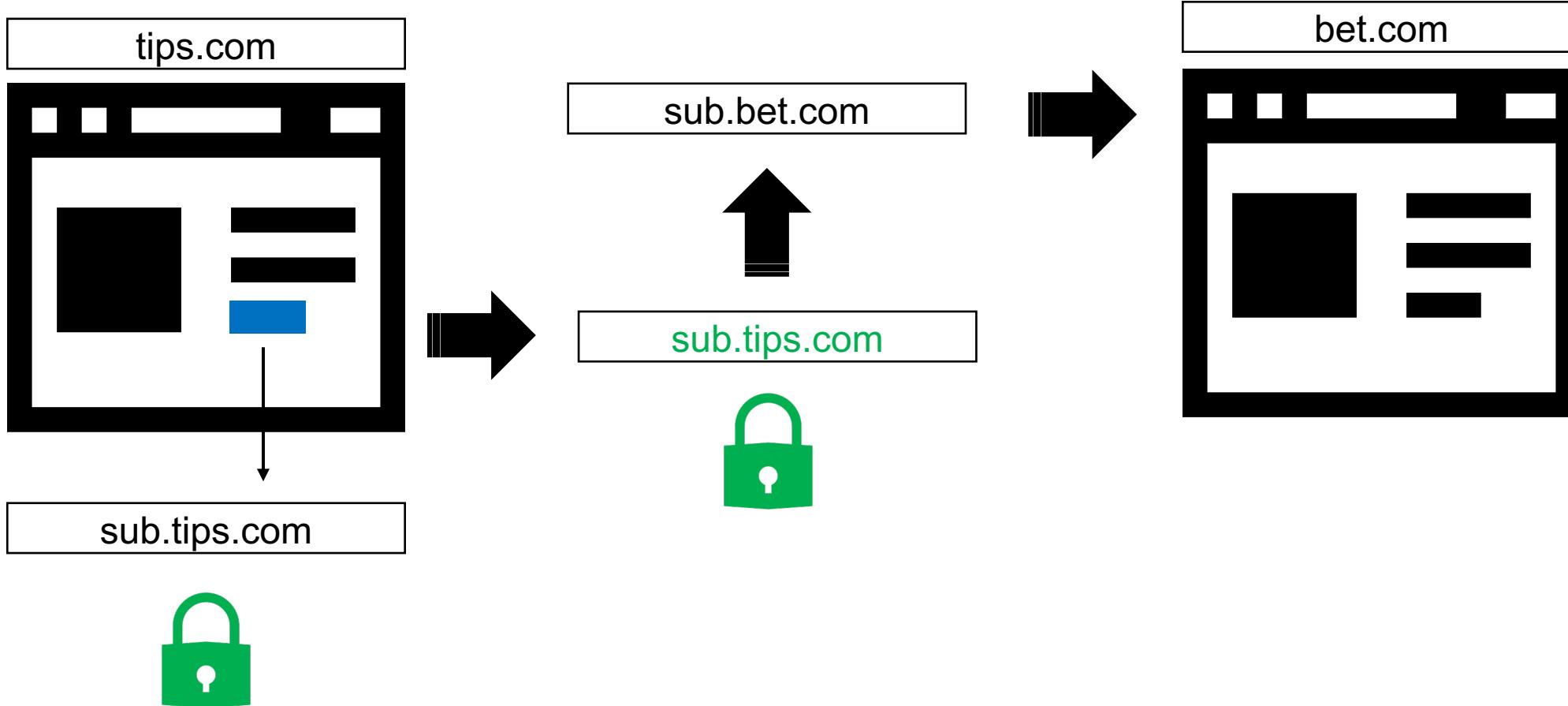


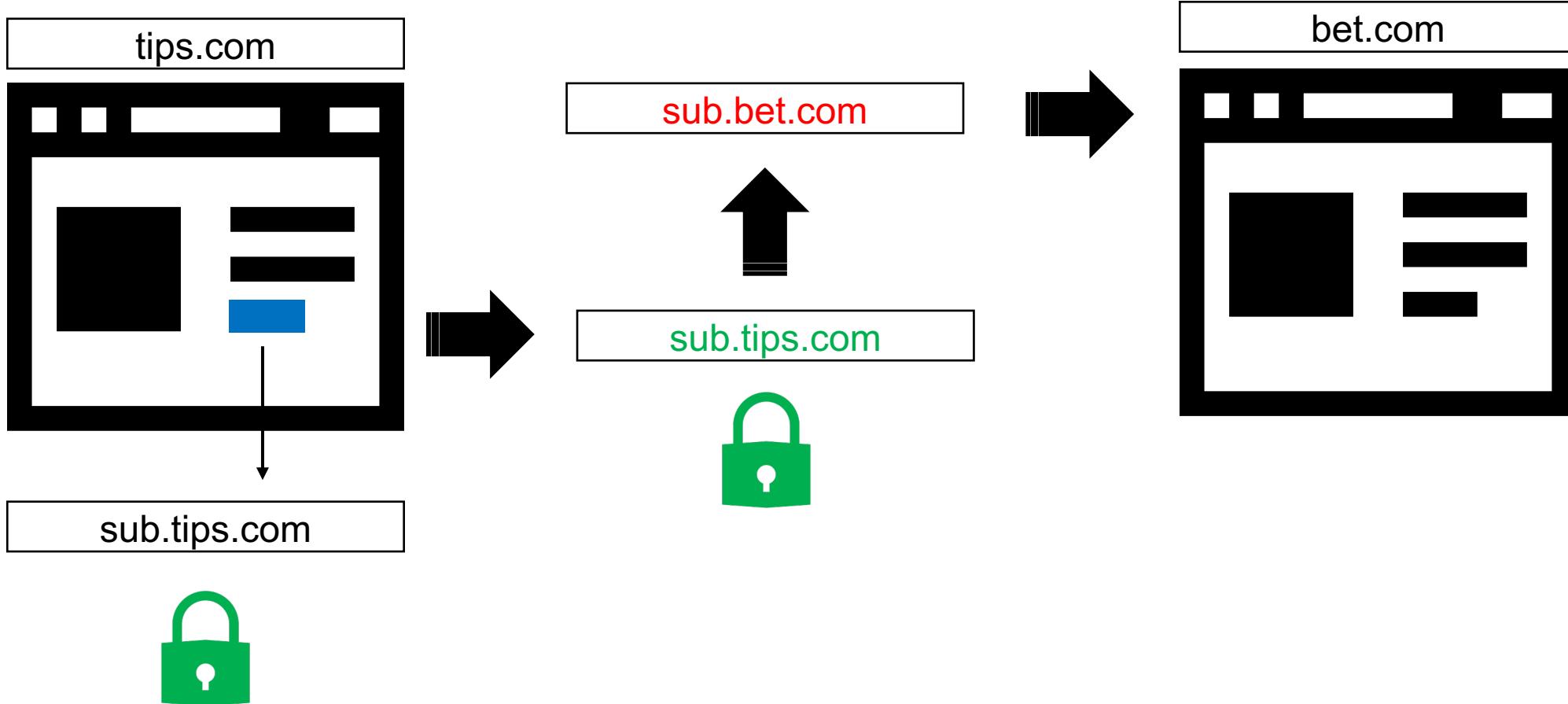


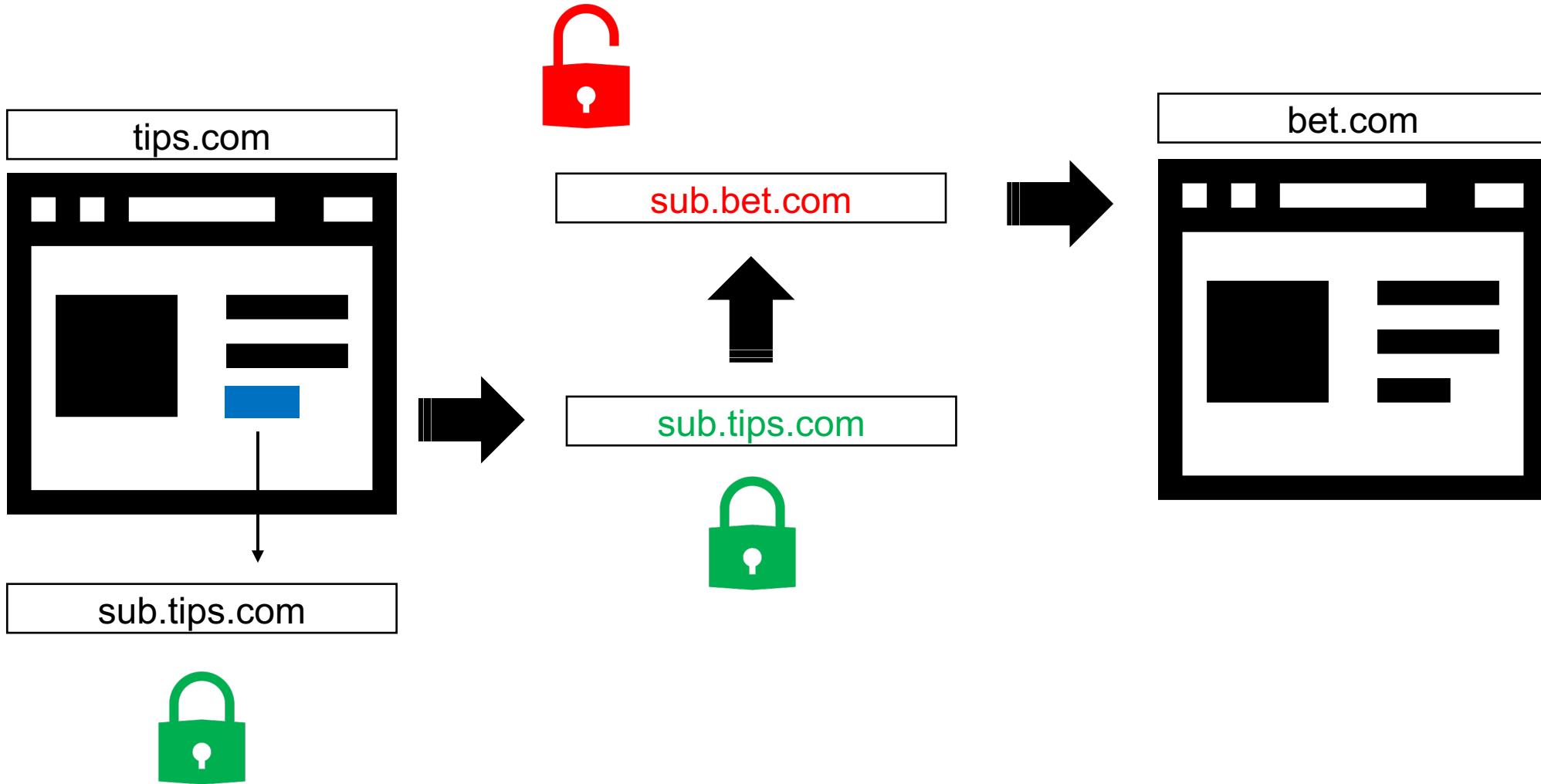


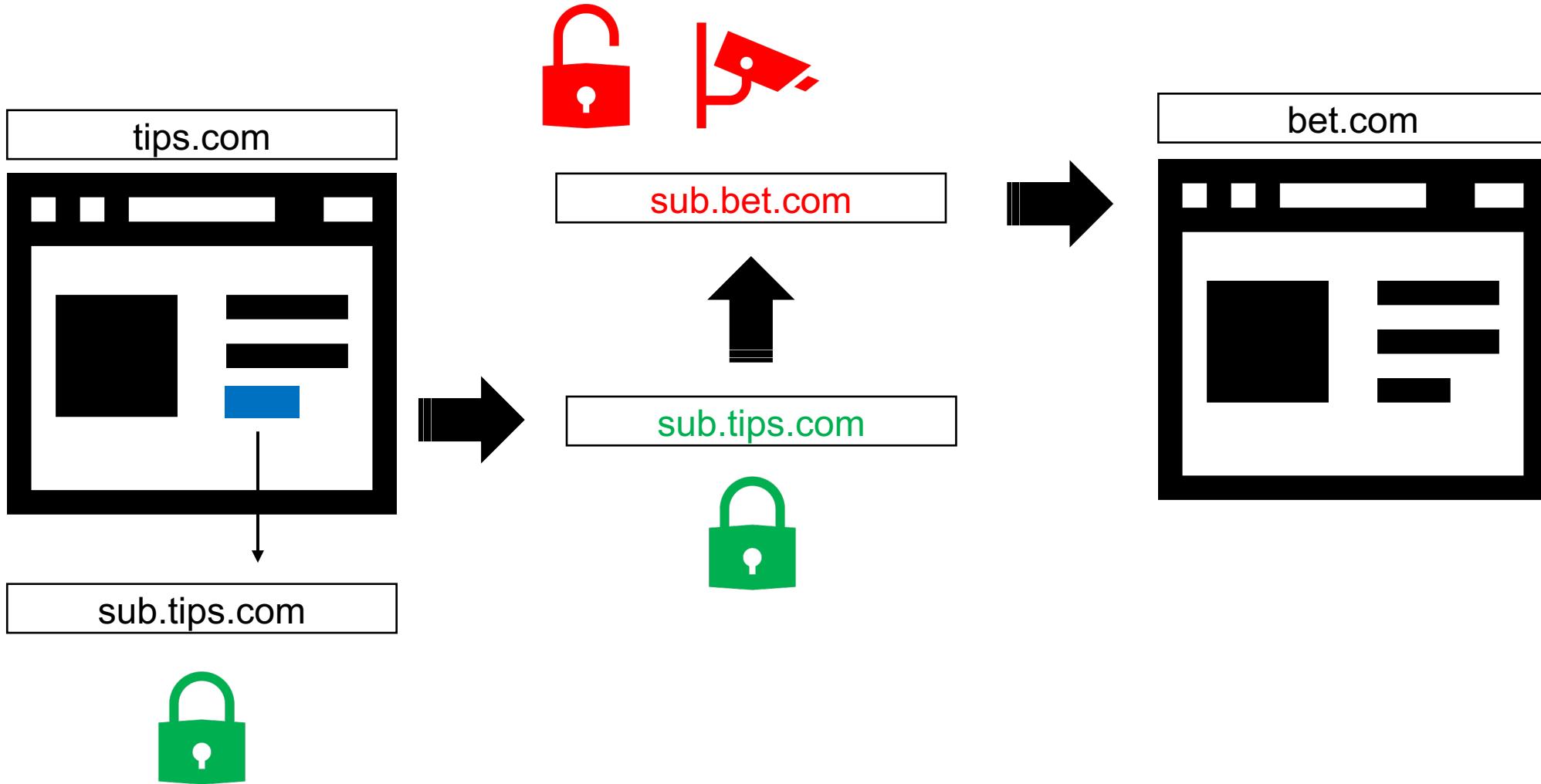


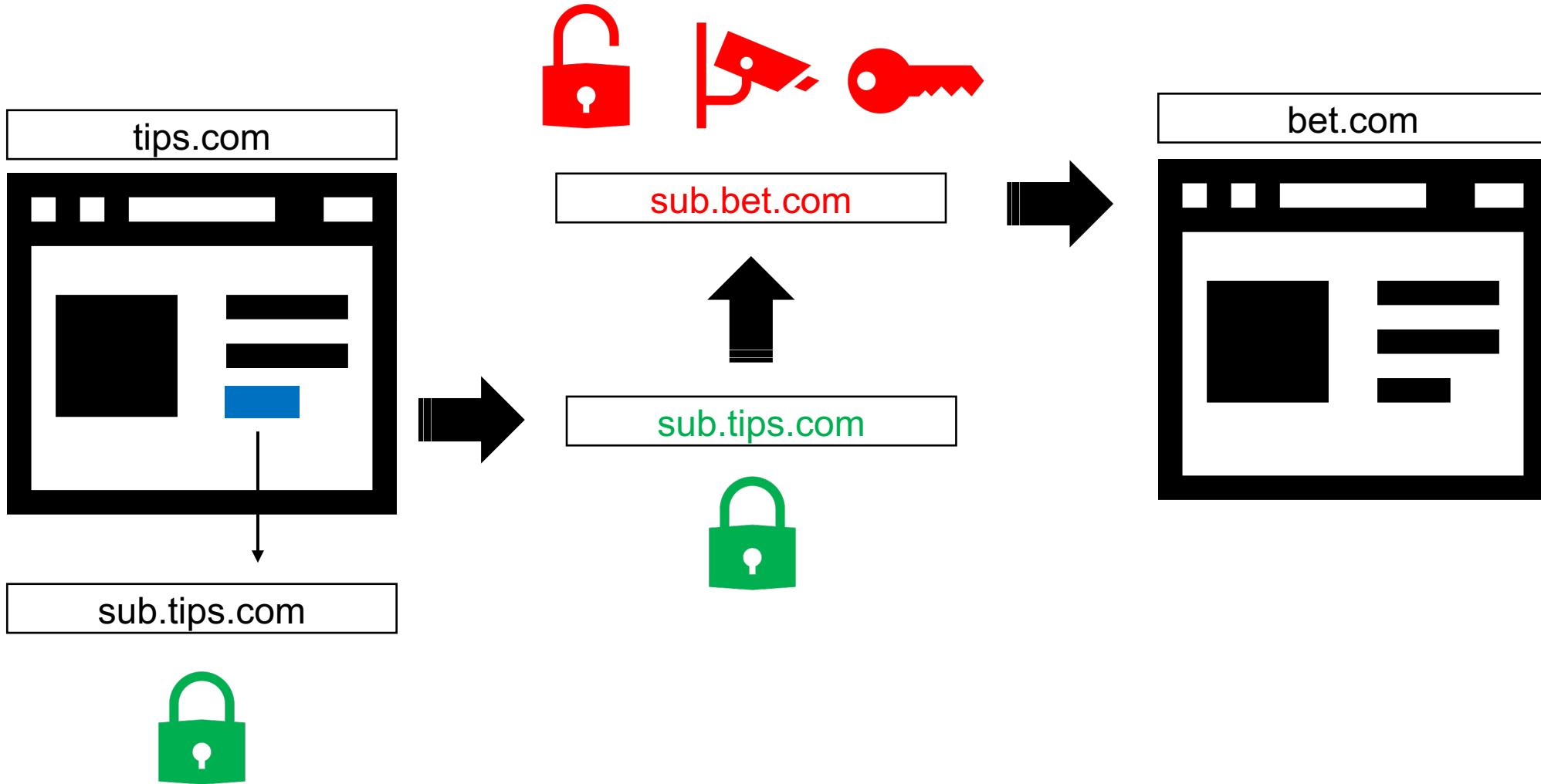


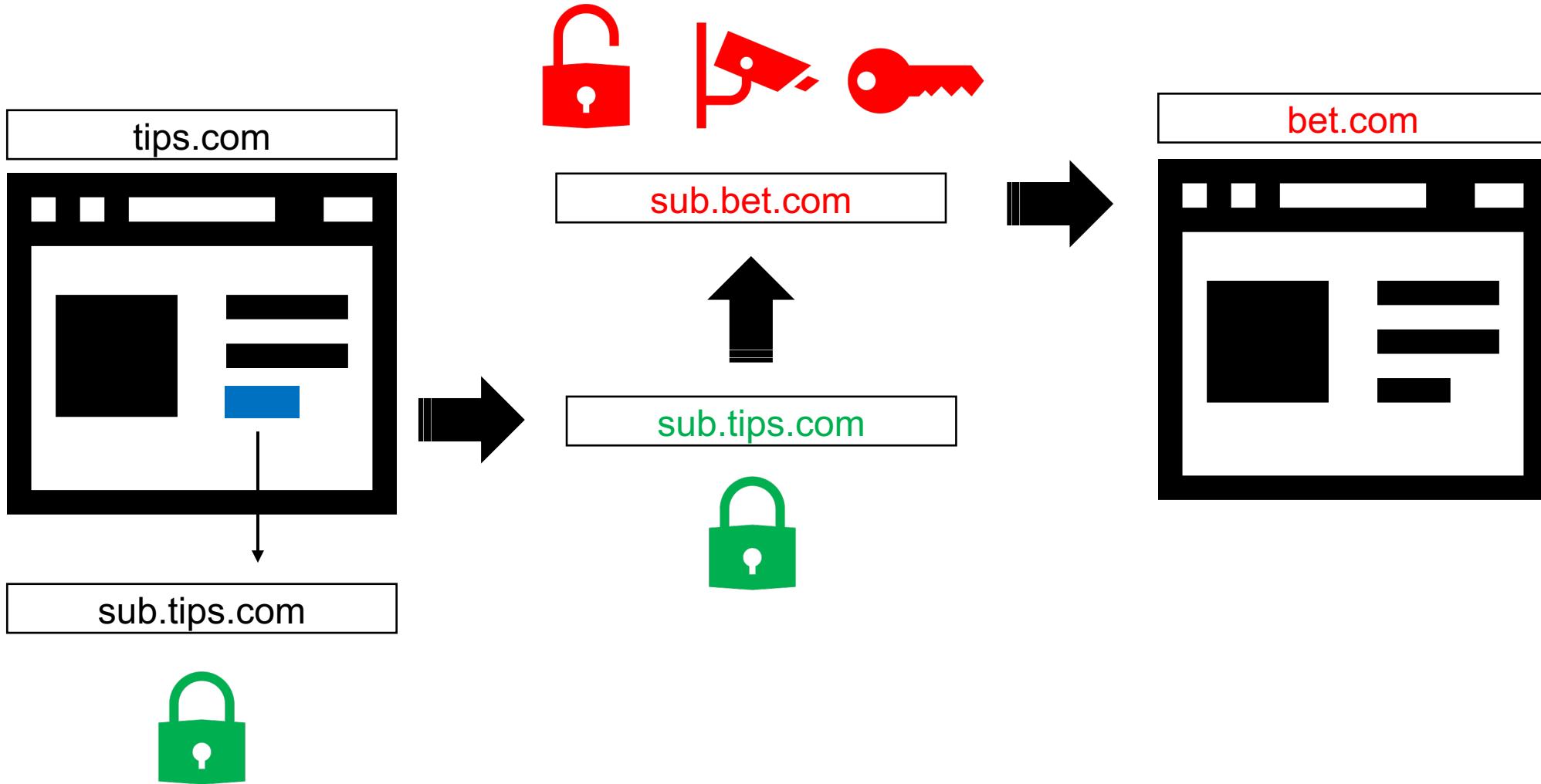


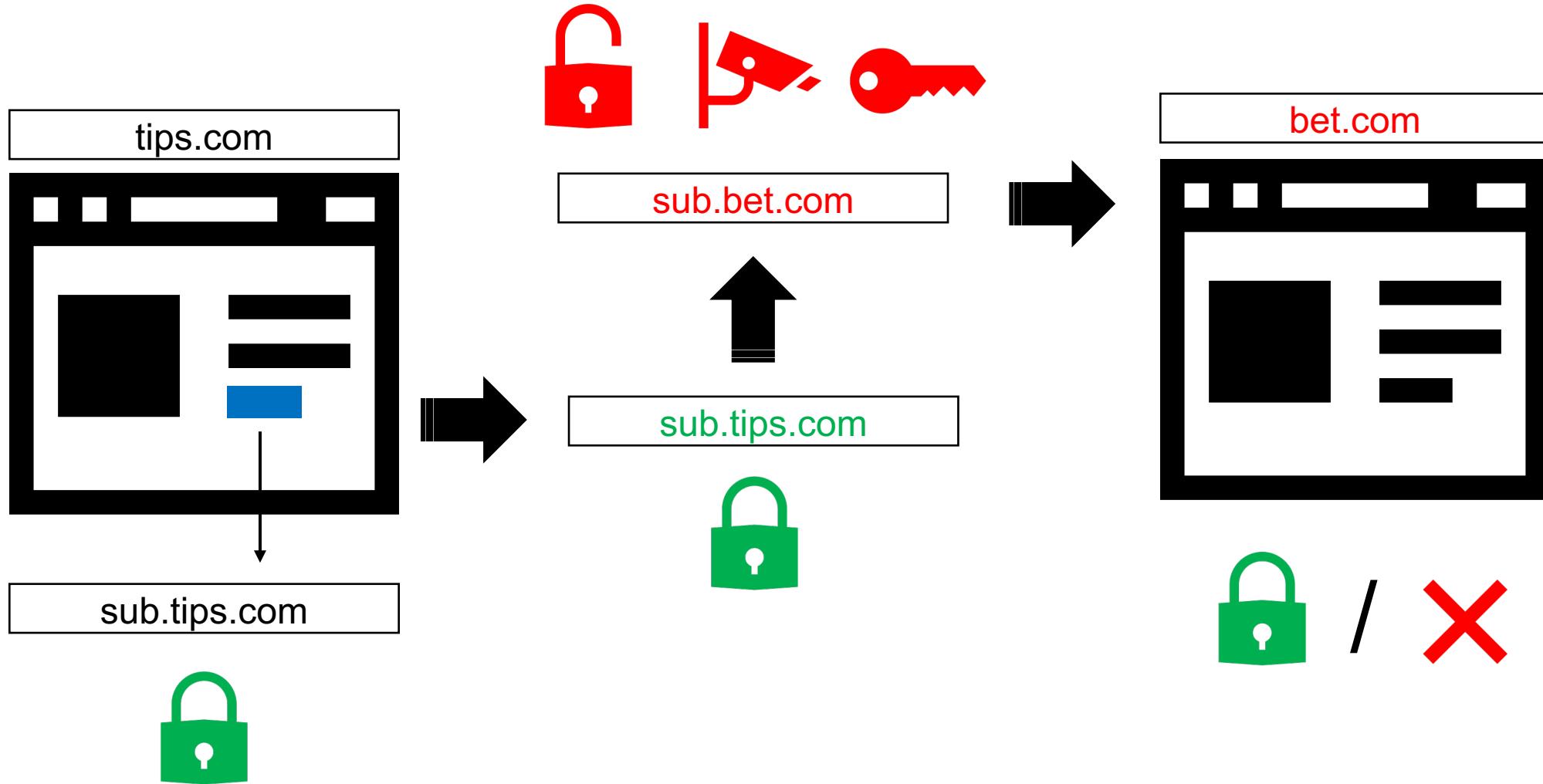












# Click Contract



# **Click Contract**

**What You See  
Is What You Get**

# **Click Contract**

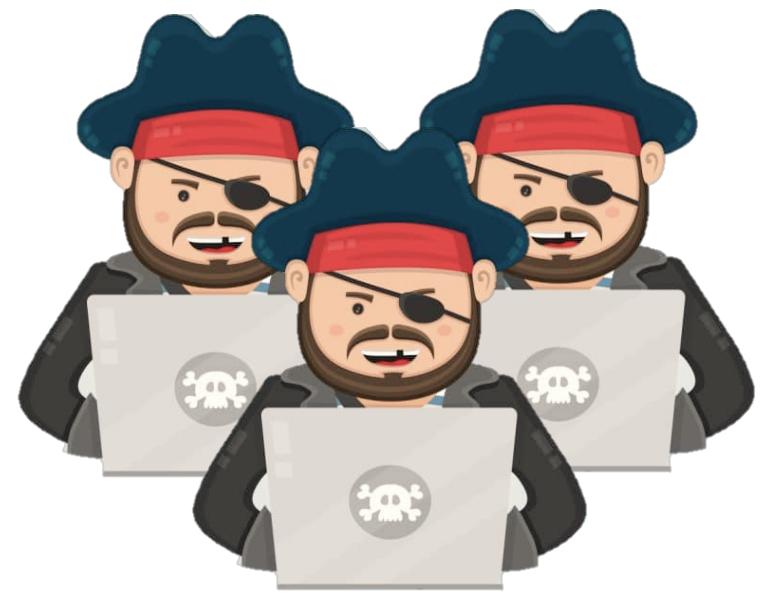
# Trust in the Endpoints

# Contribution

# 2.5M Clicks

Chromium based Crawler

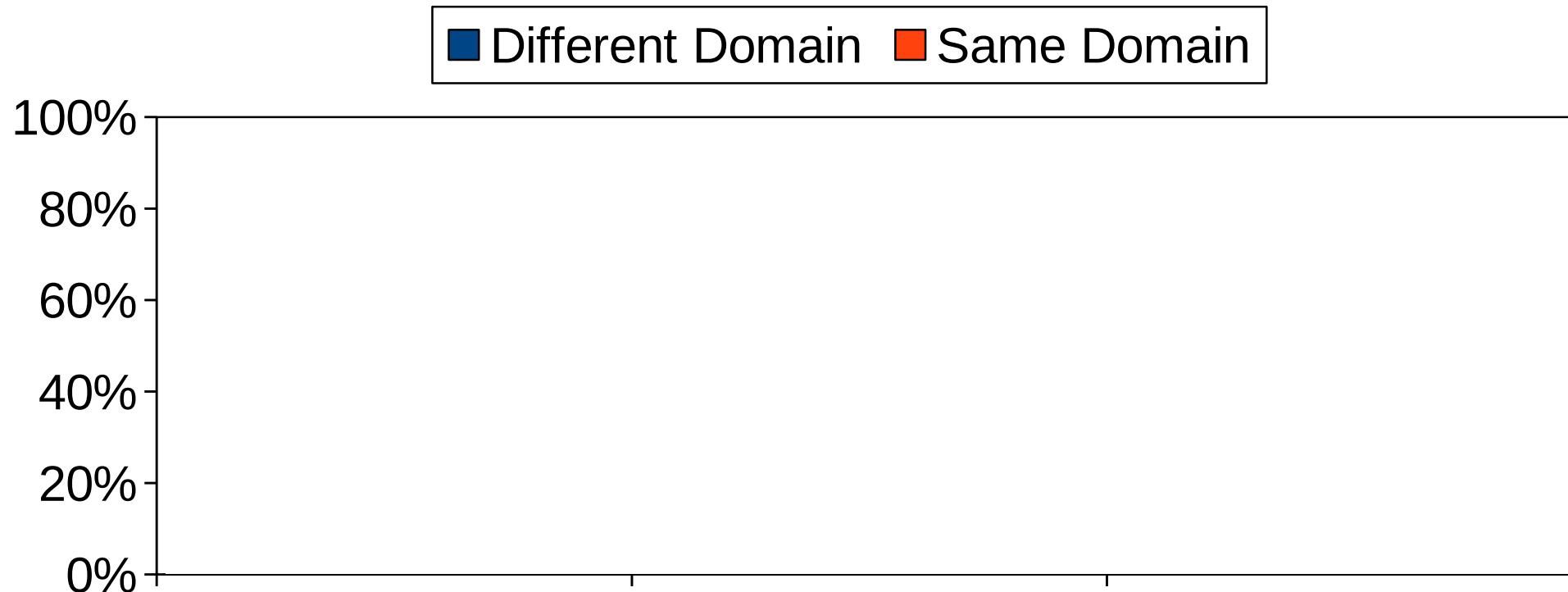
# Contribution



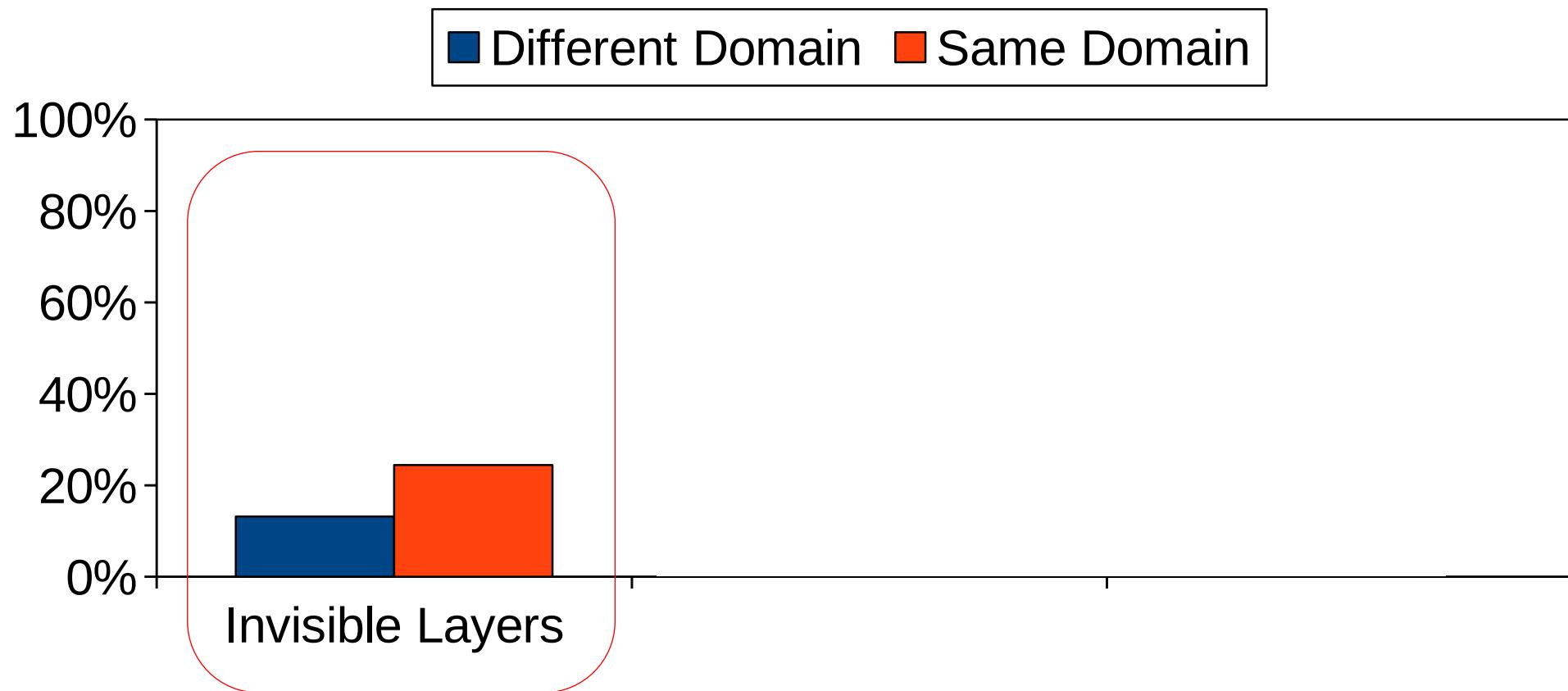
# Misleading Targets



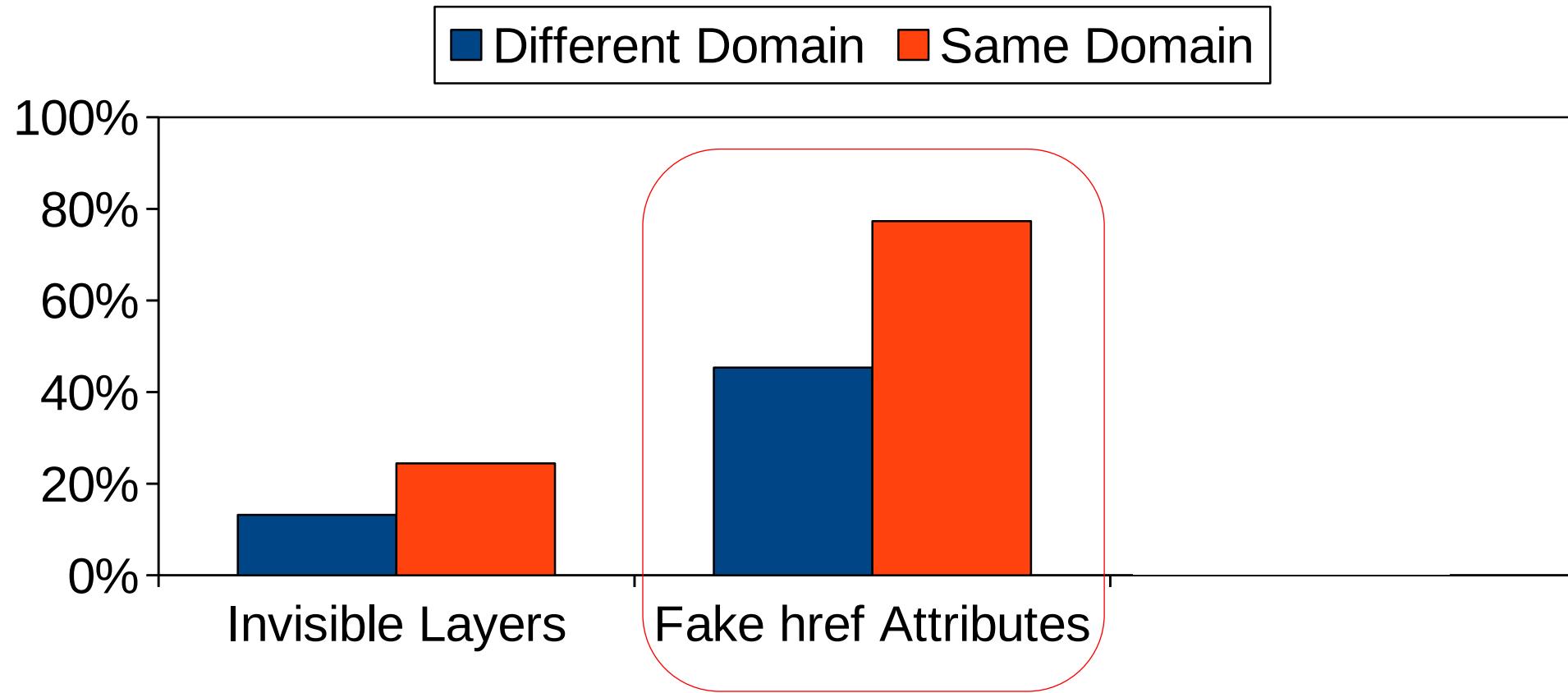
# Misleading Targets



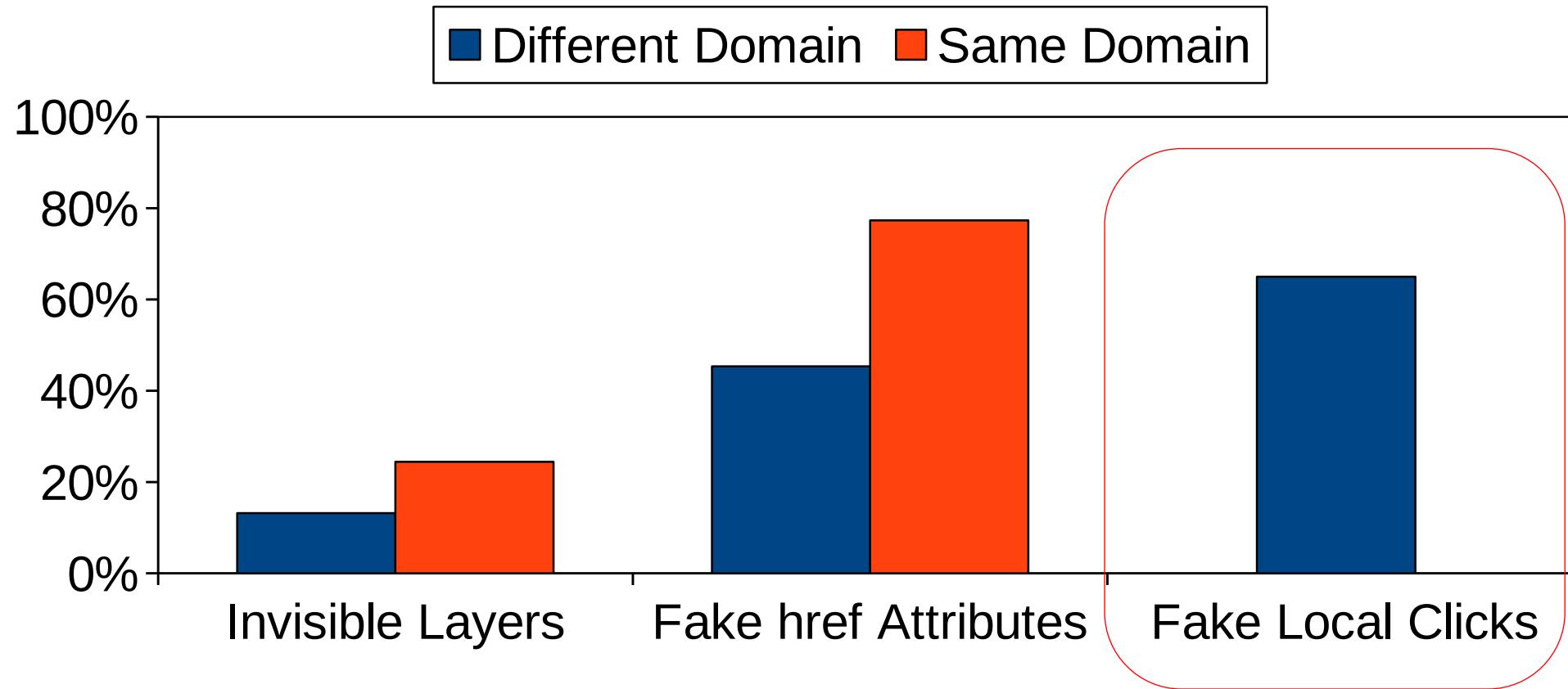
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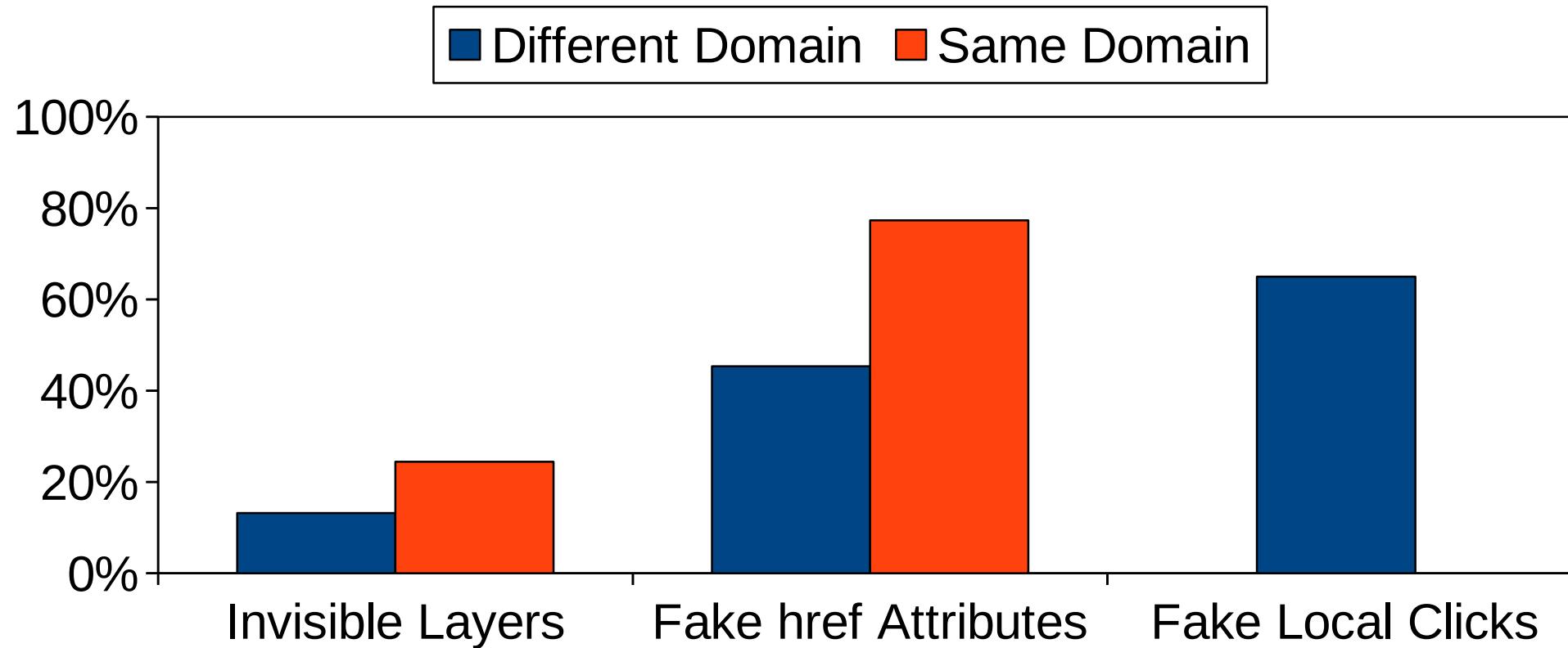
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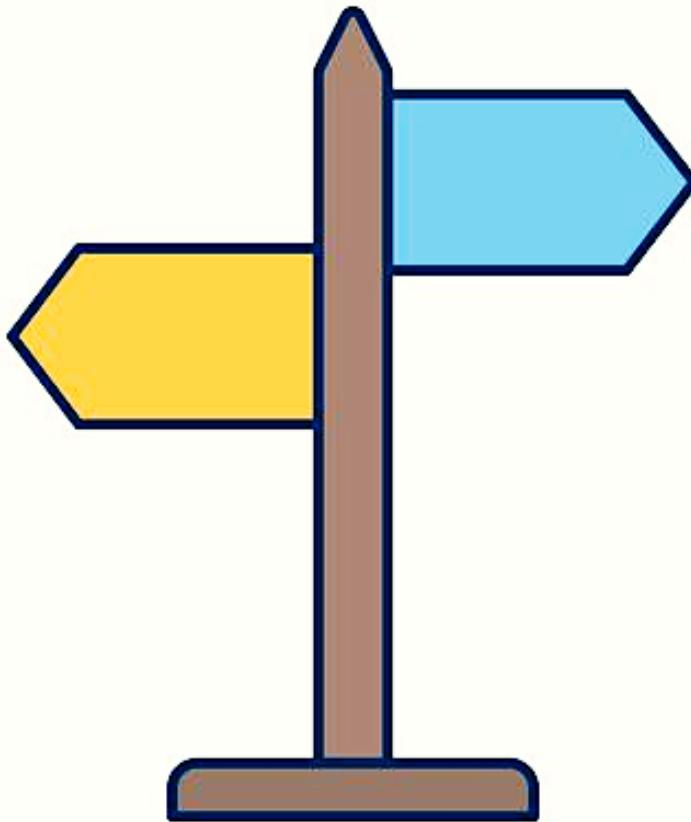
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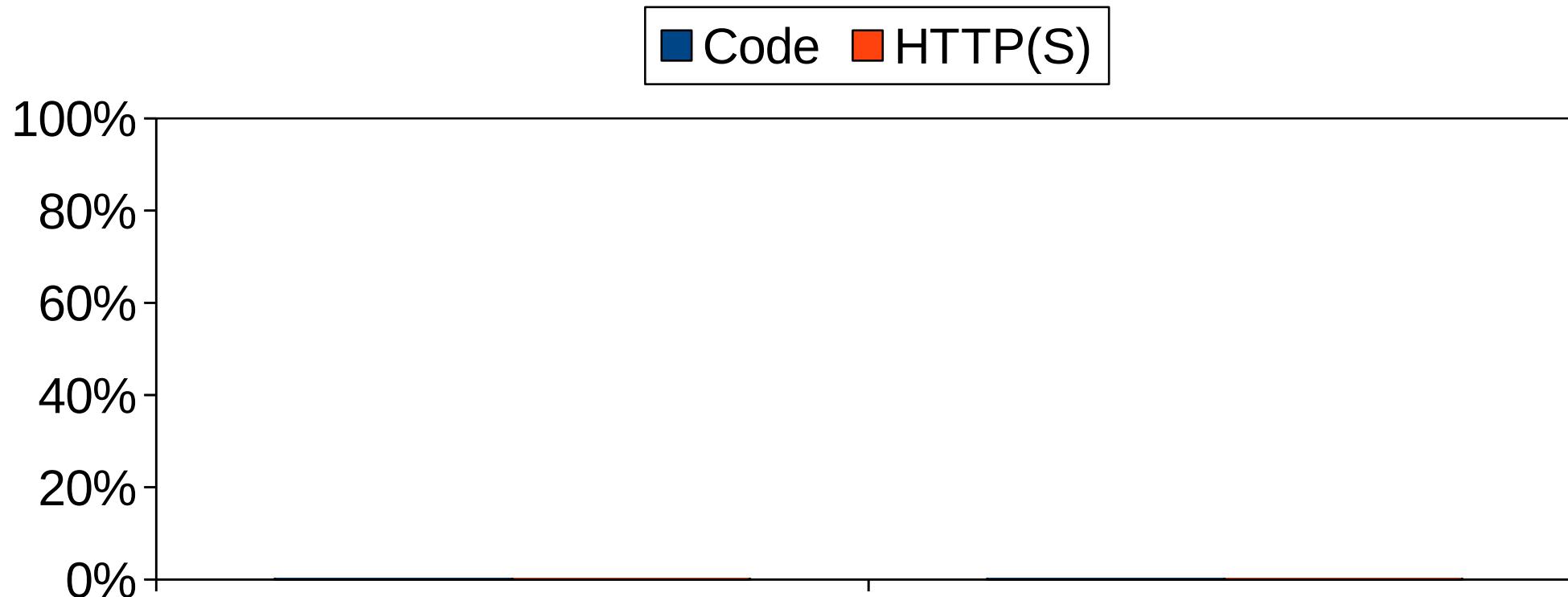
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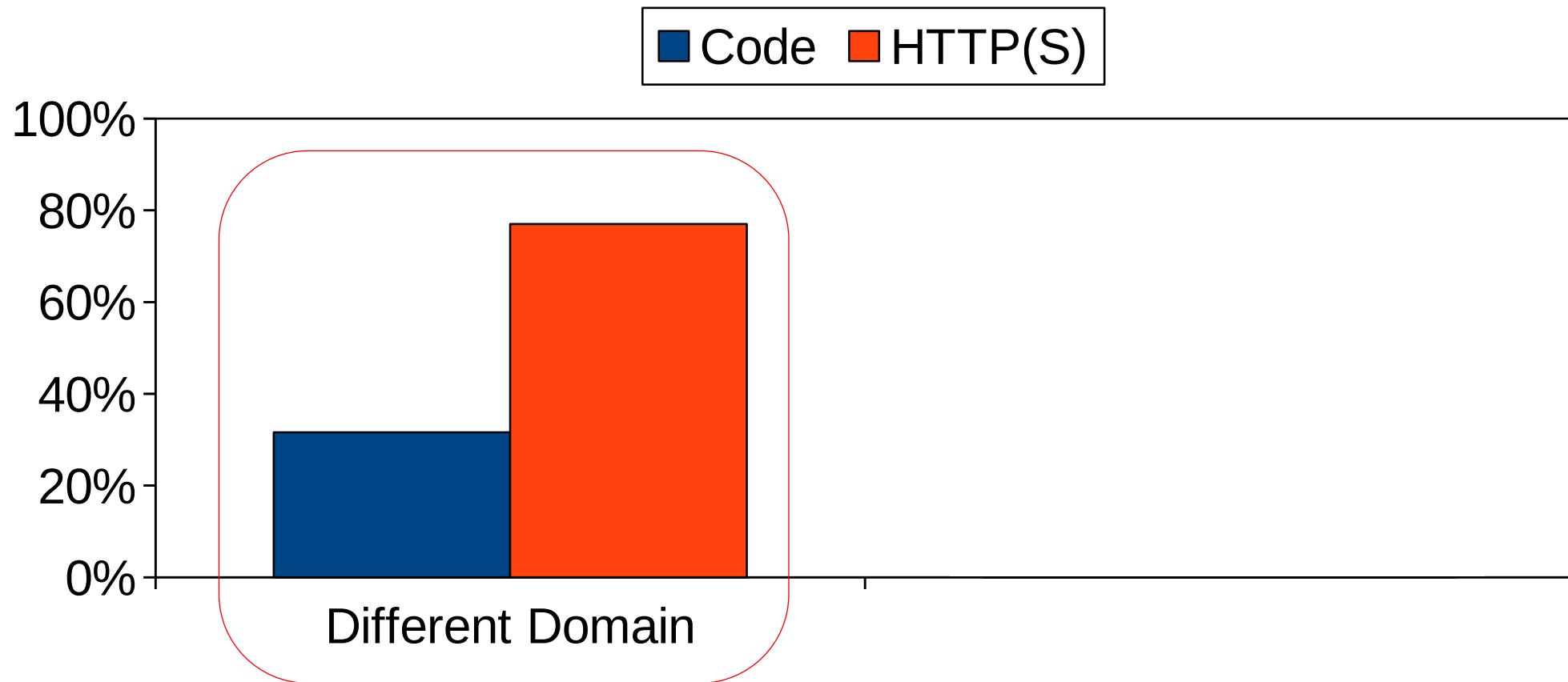
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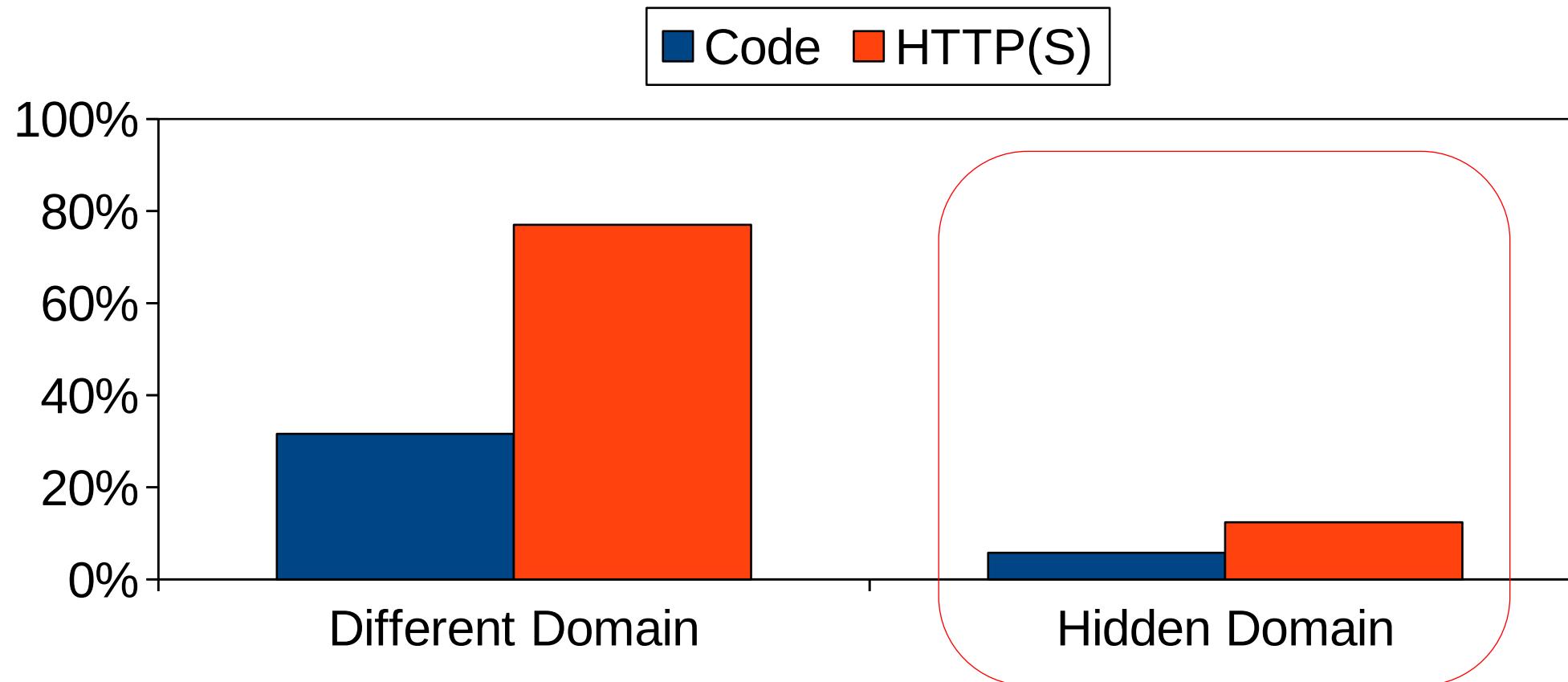
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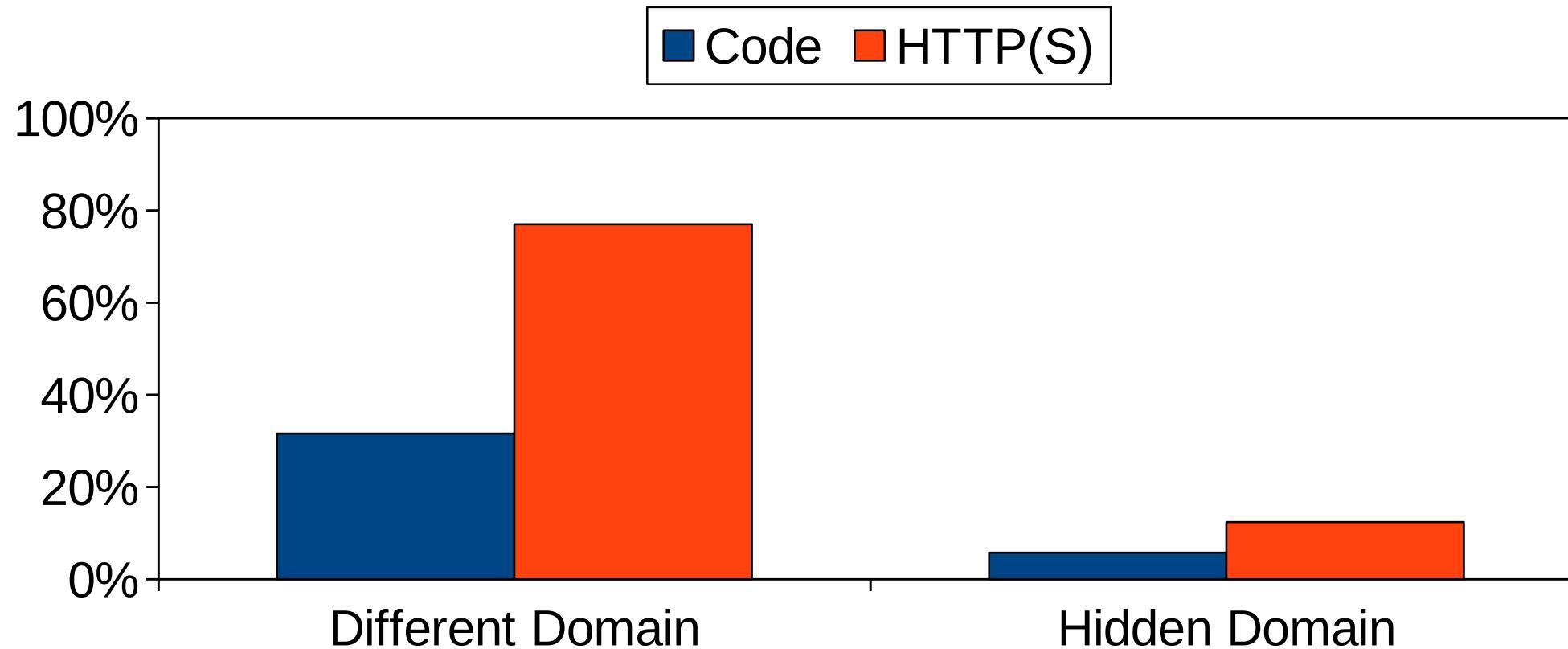
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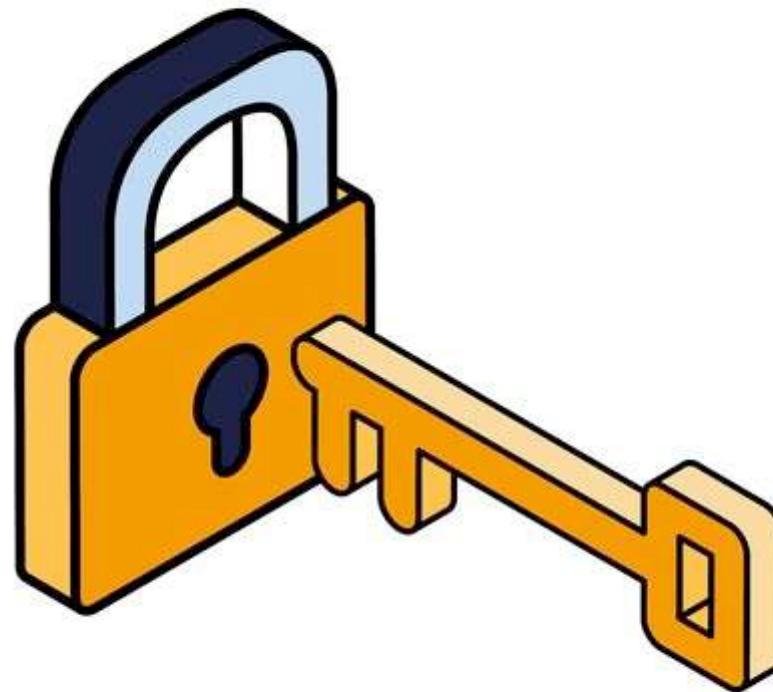
# User Redirection



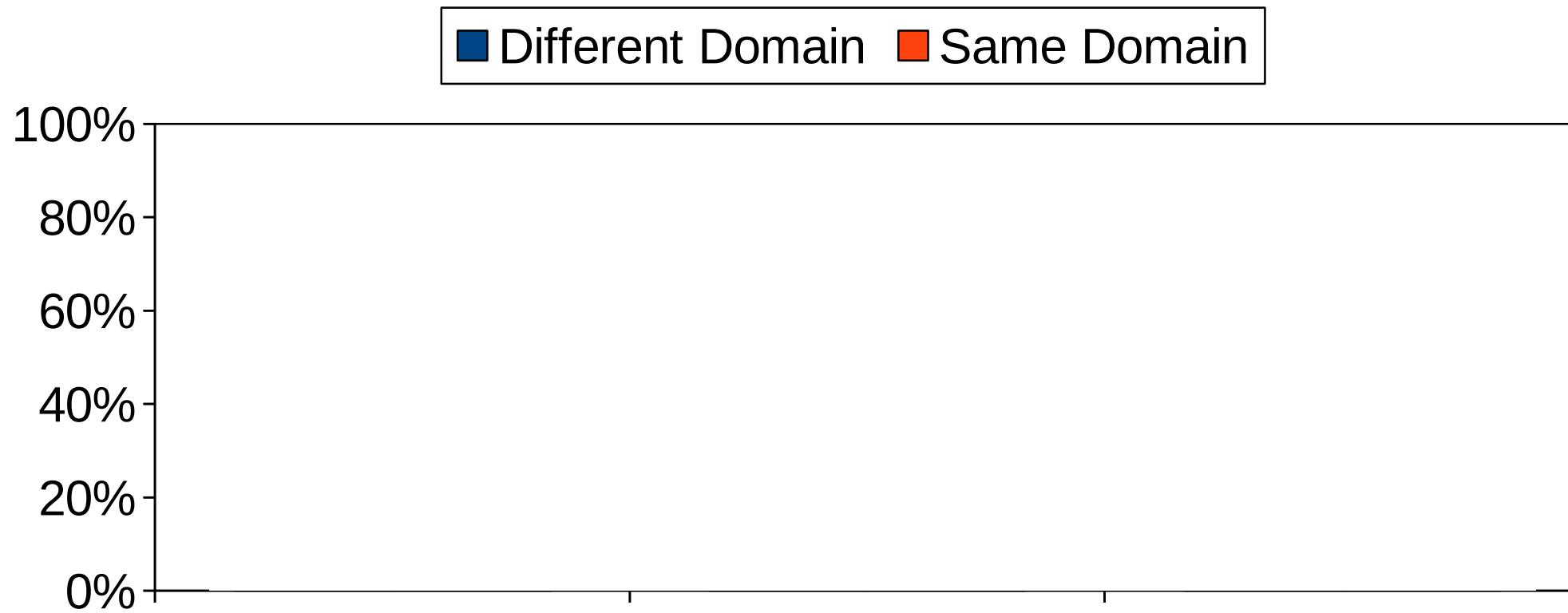
# User Redirection



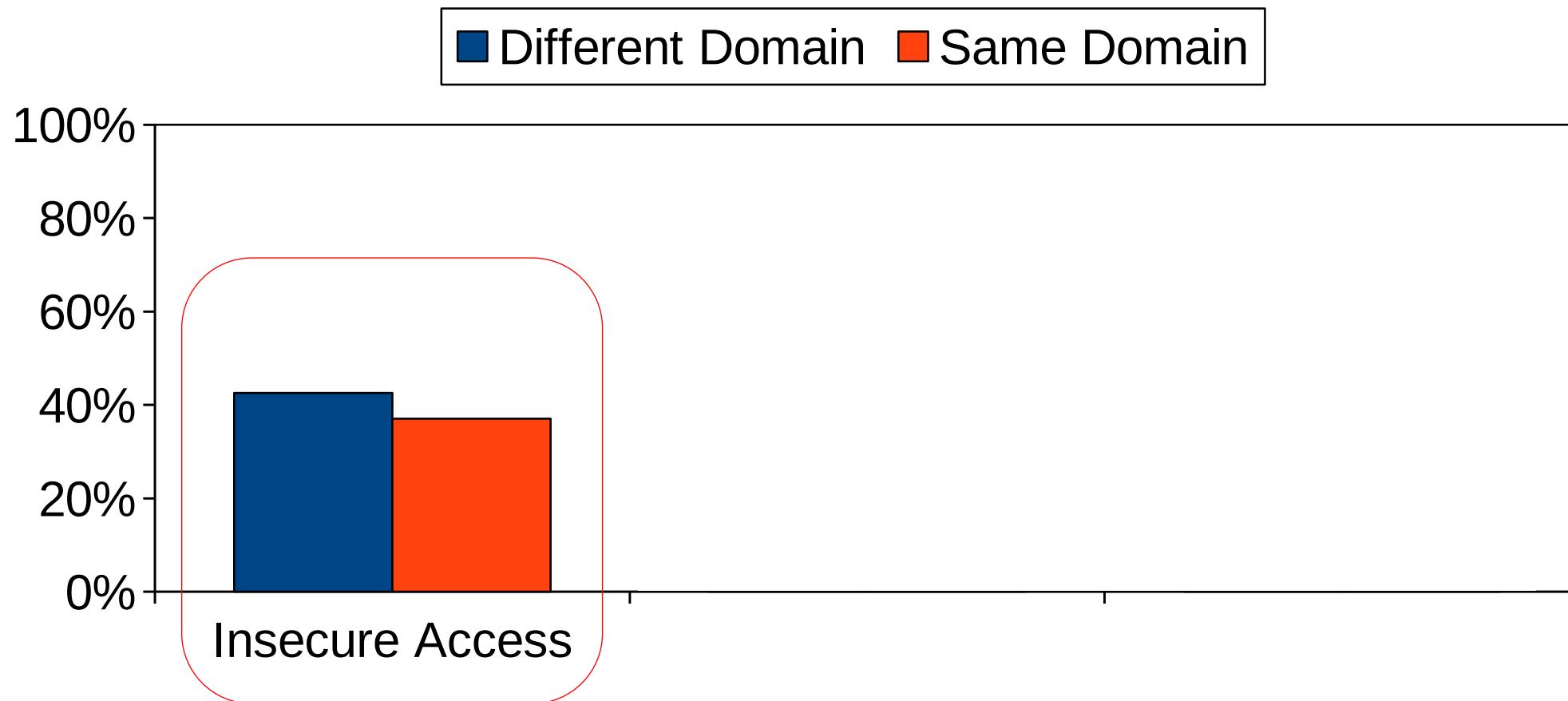
# Insecure Communication



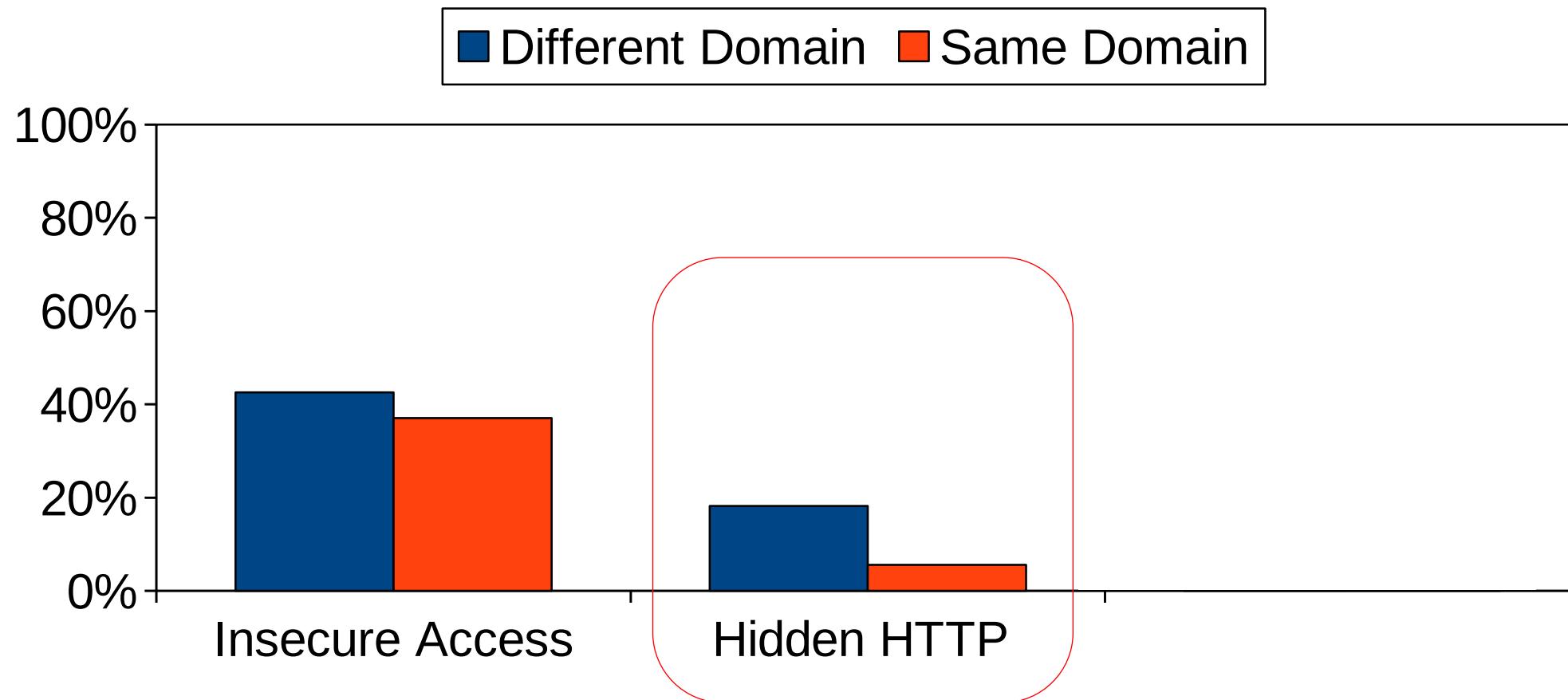
# Insecure Communication



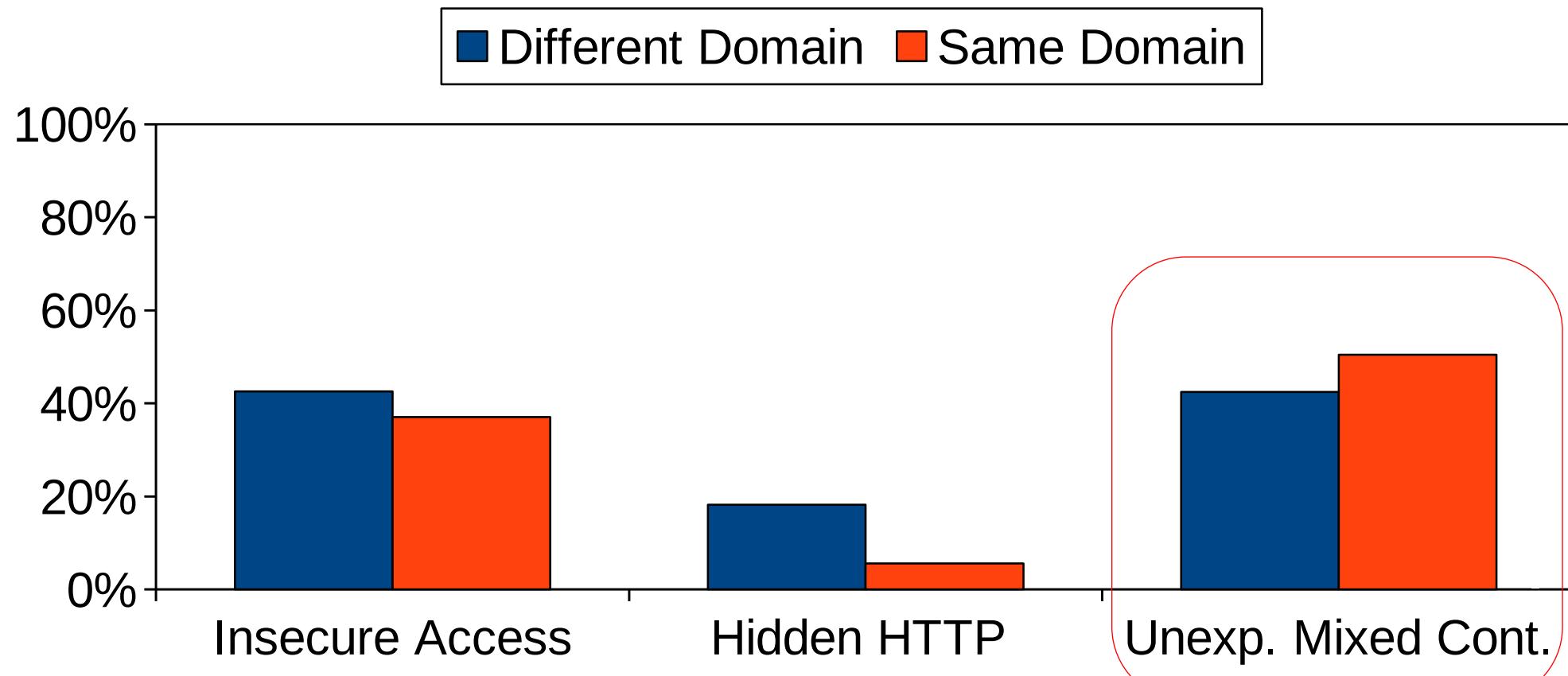
# Insecure Communication



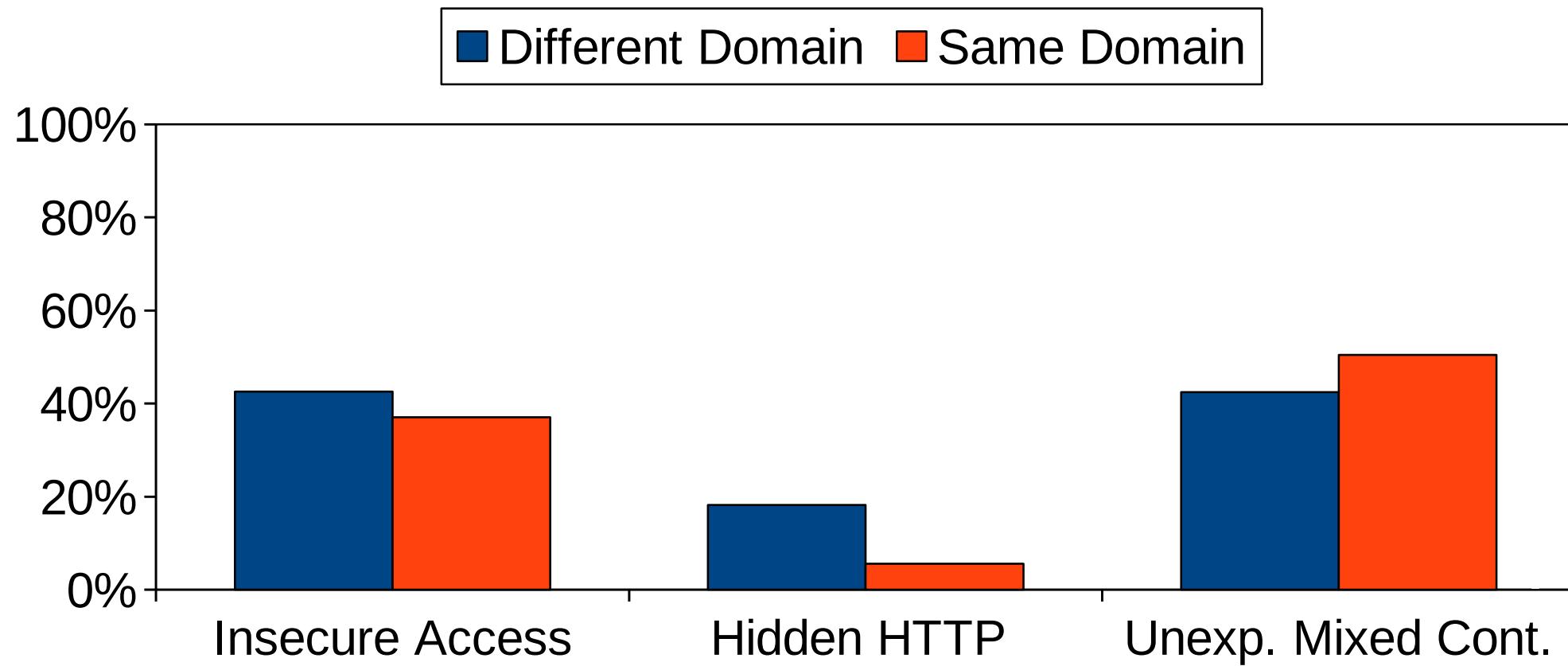
# Insecure Communication



# Insecure Communication



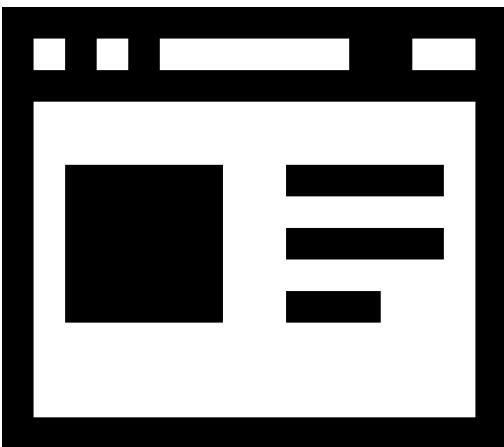
# Insecure Communication



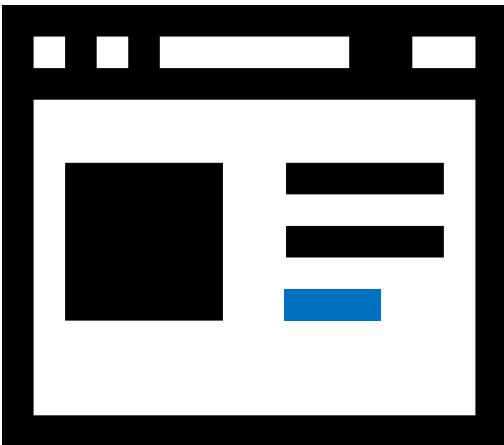
# Phishing Threats



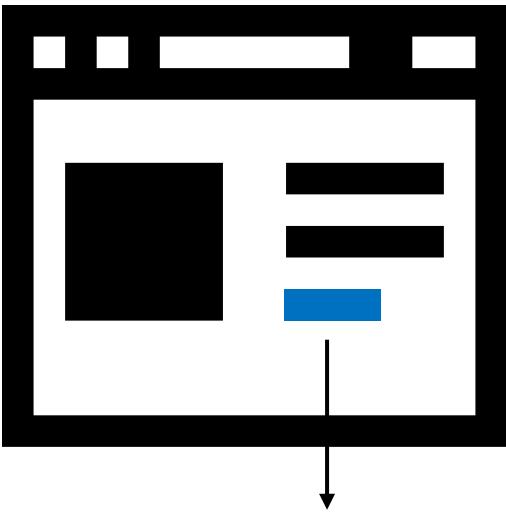
social-network.com



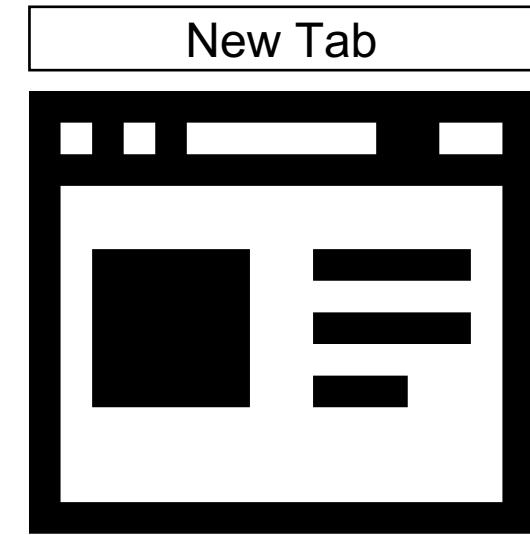
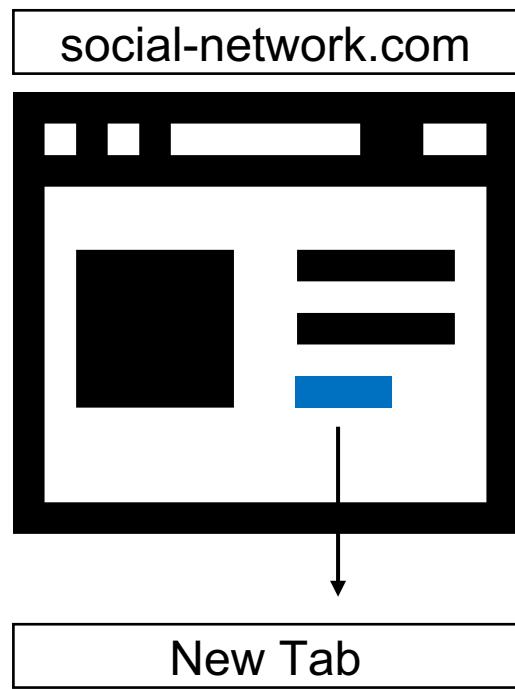
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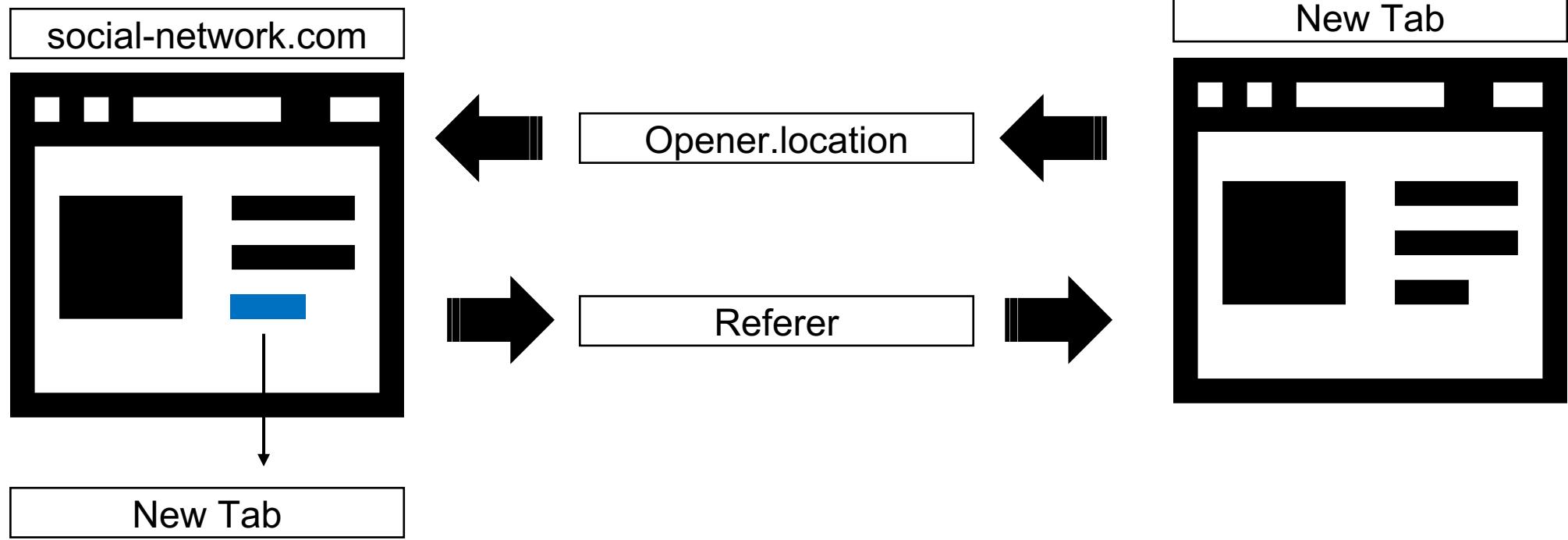


social-network.com



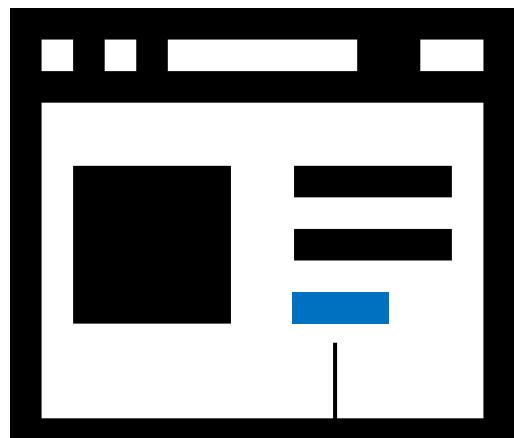
New Tab







social-netwrok.com

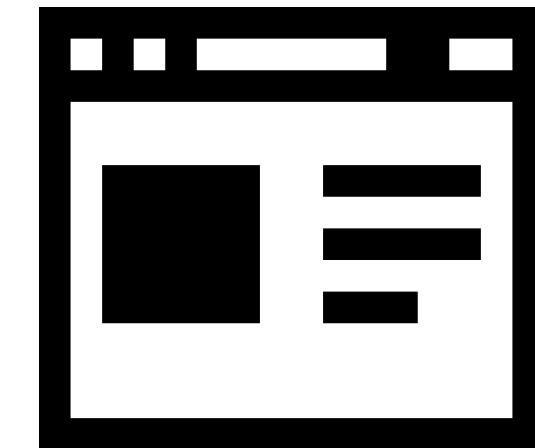


New Tab

Opener.location

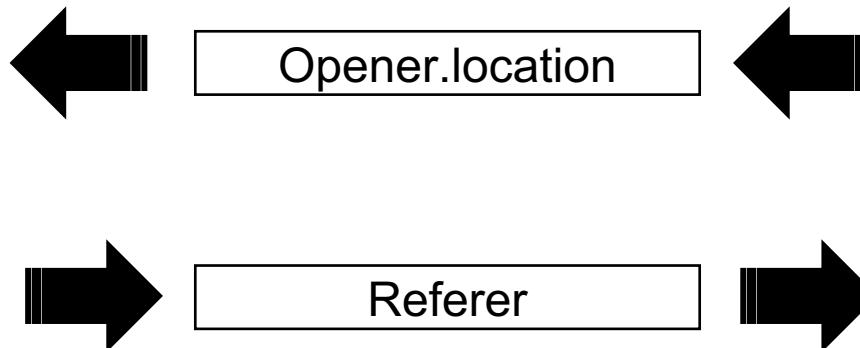
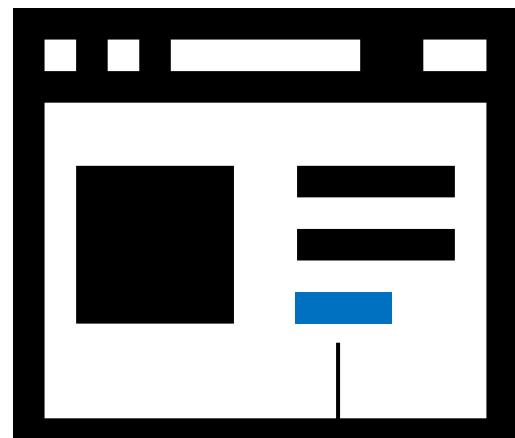
Referer

New Tab





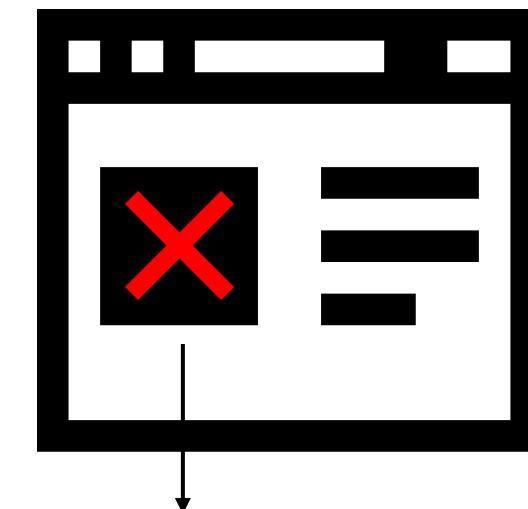
social-netwrok.com



Opener.location

Referer

New Tab



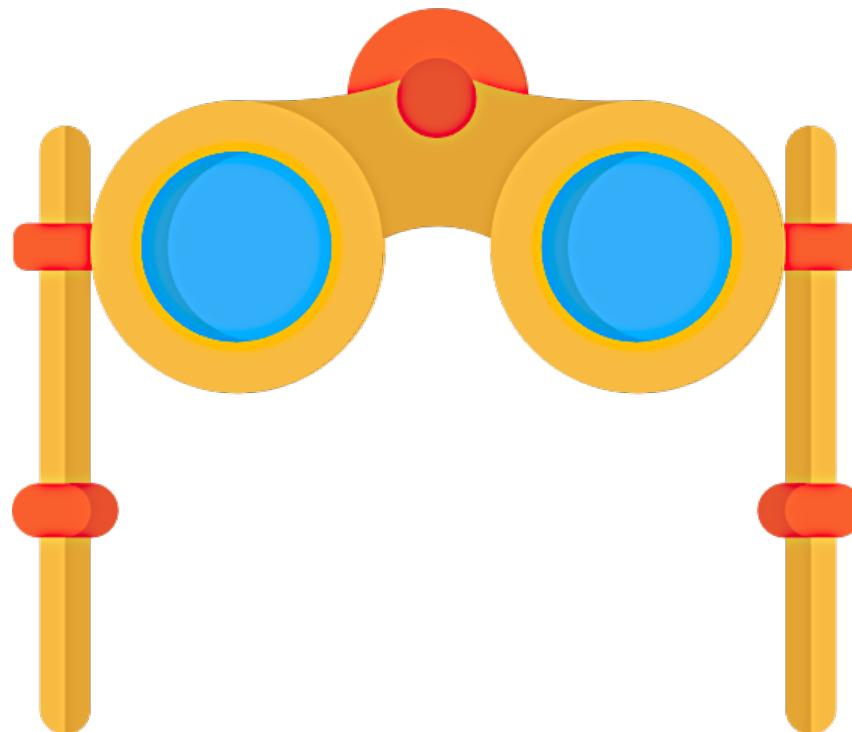
Self Close

# Phishing Threats

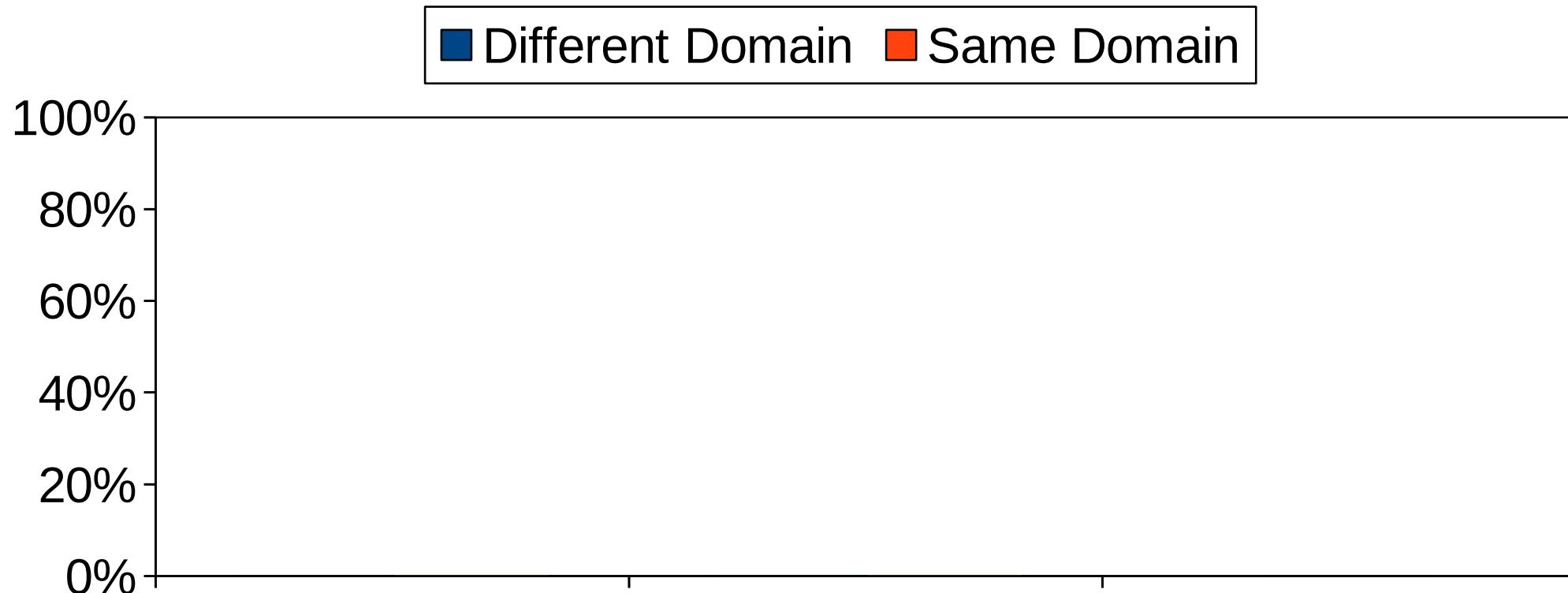
2% Protected

90% Opened New Tabs

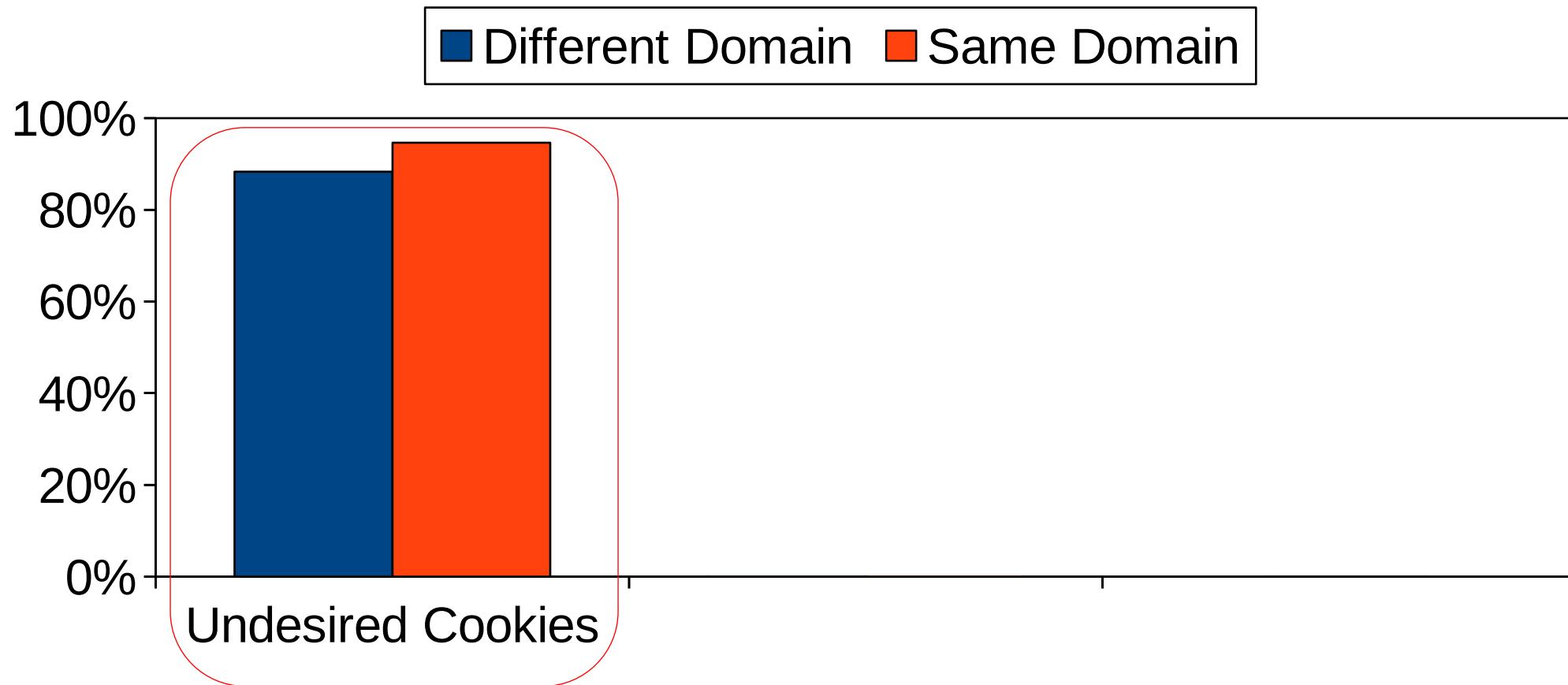
# User Tracking



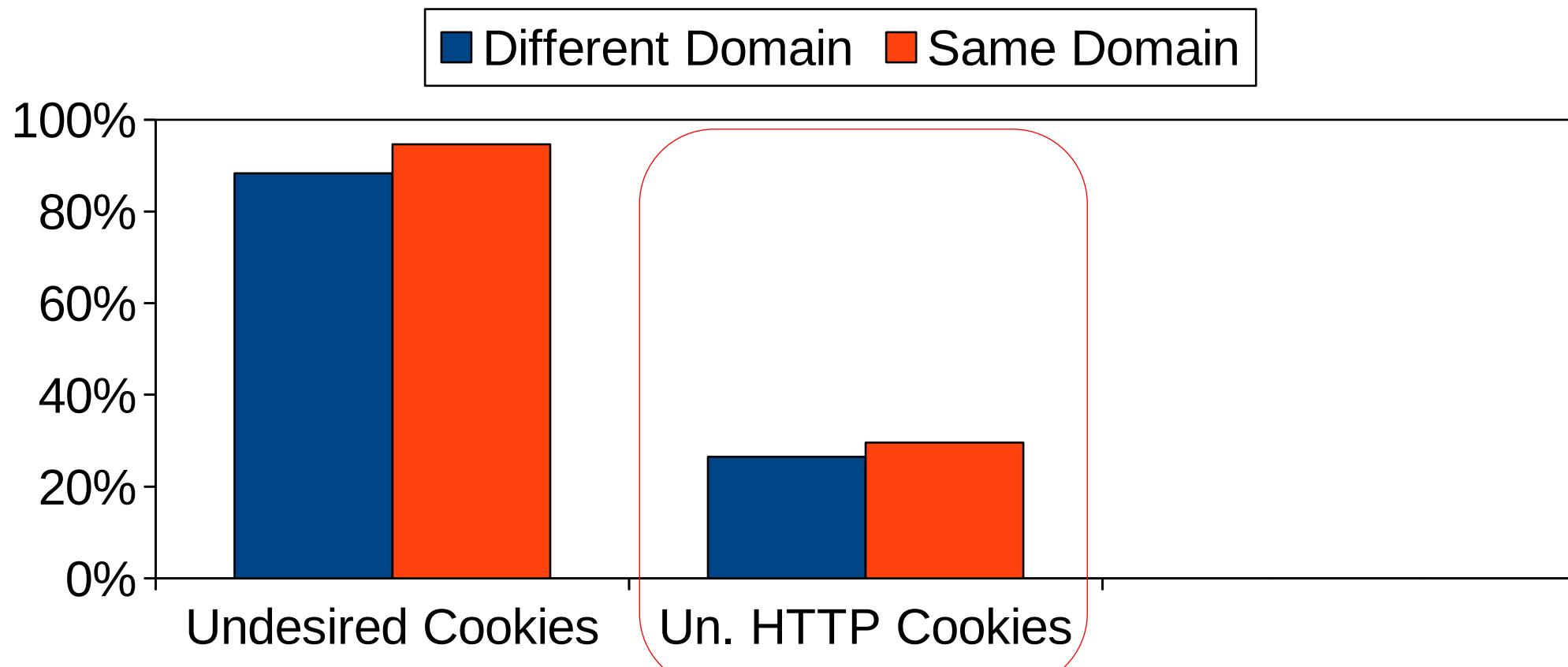
# User Tracking



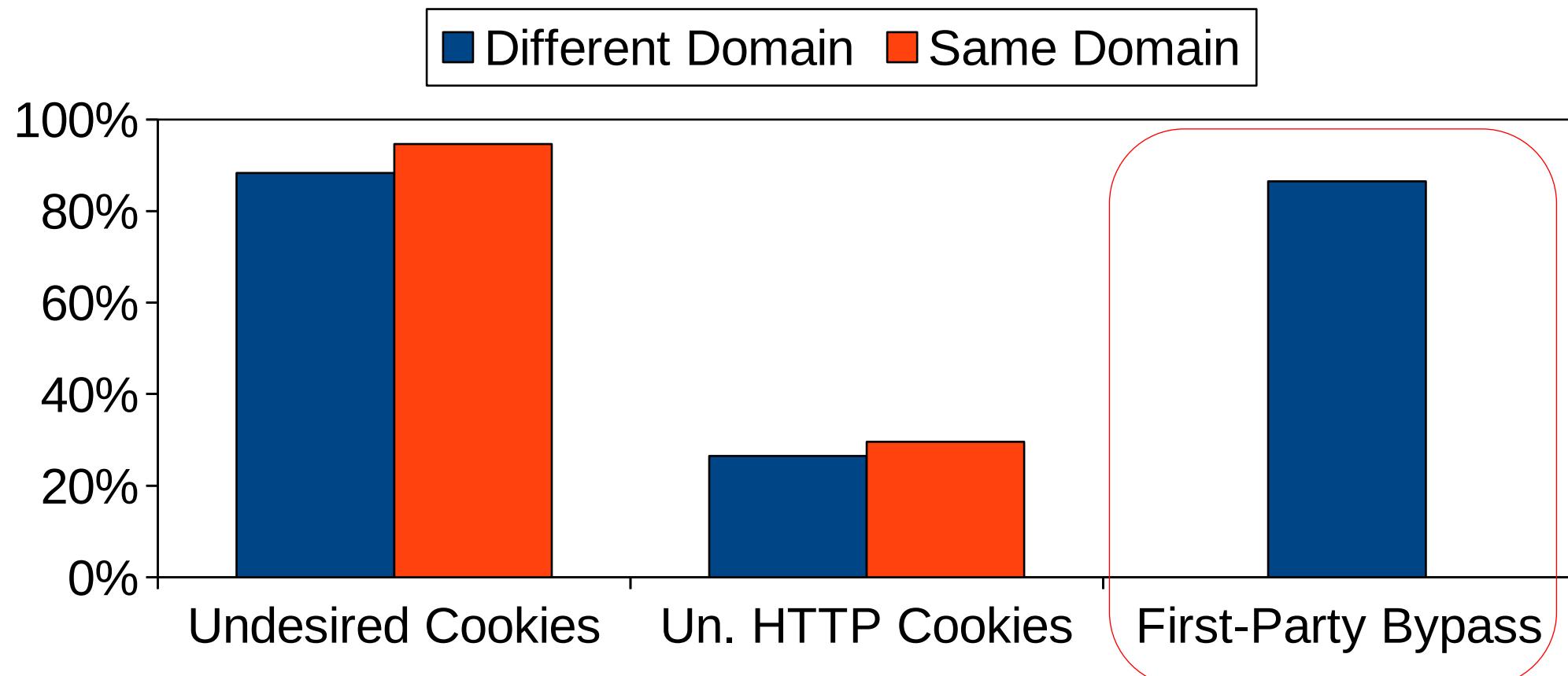
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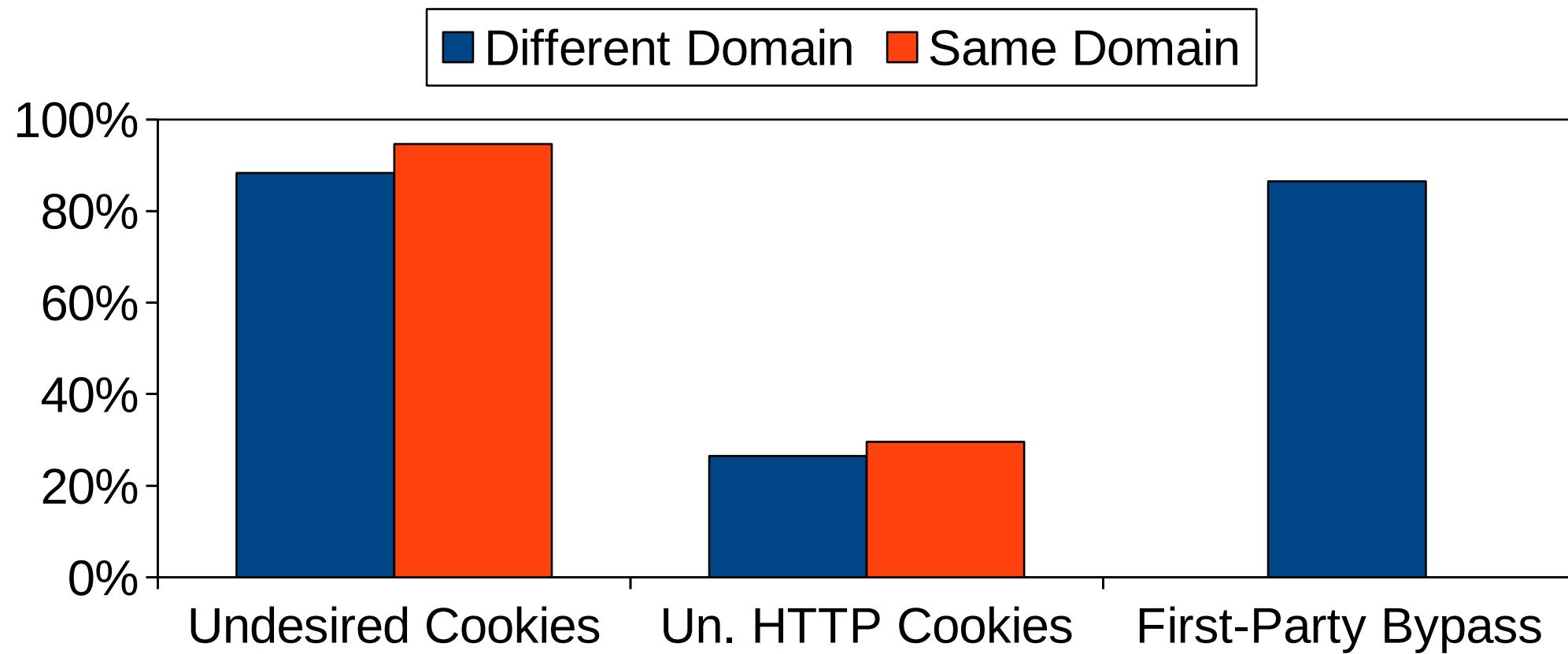
# User Tracking



# User Tracking



# User Tracking



# Threat Risk



# **Threat Risk**

Poor Click Hygiene Increases  
the Risk of End Users

10-20% from Low to High



# Thank You!

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[Iskander-Sanchez-Rola.com](http://Iskander-Sanchez-Rola.com)

