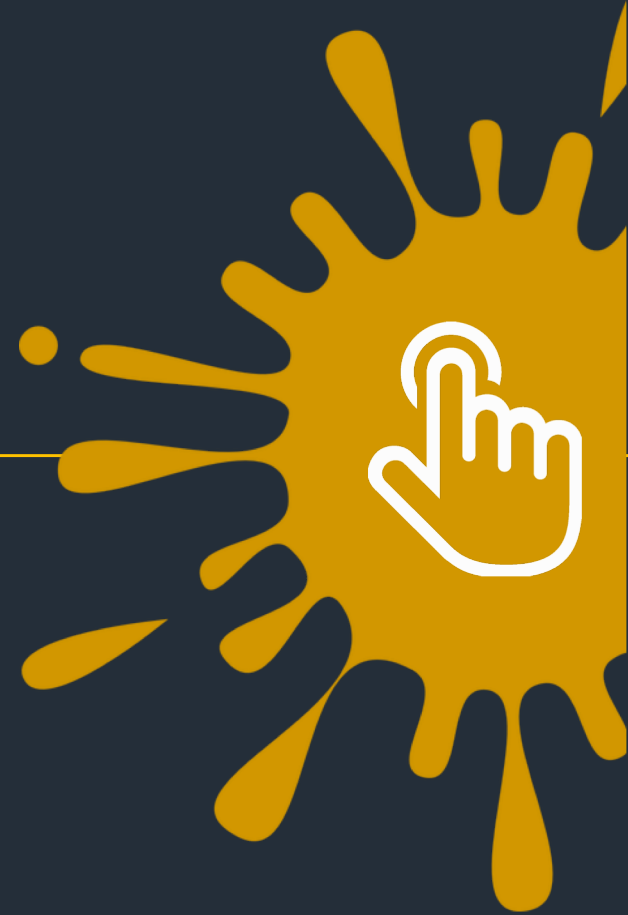




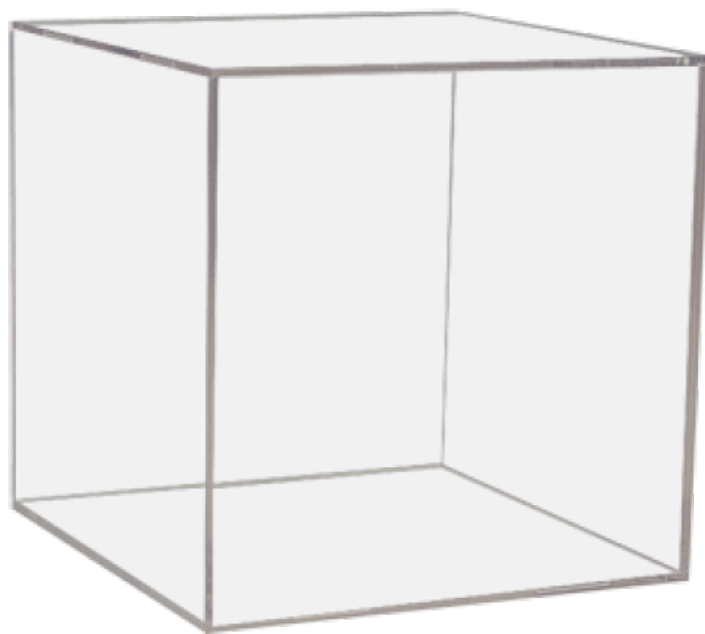
APRIL 23RD - 2020

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

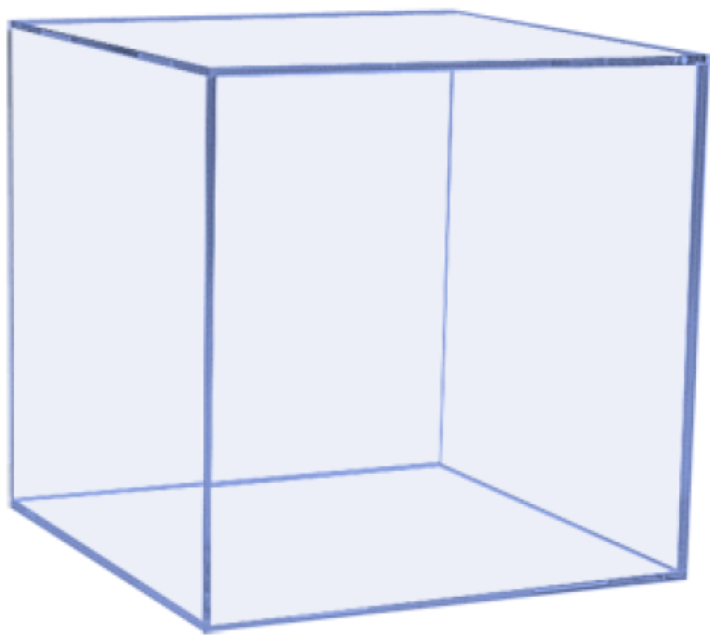
Iskander Sanchez-Rola, Davide Balzarotti, Christopher Kruegel,
Giovanni Vigna, and Igor Santos



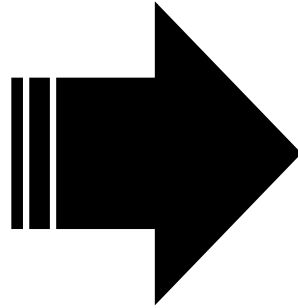
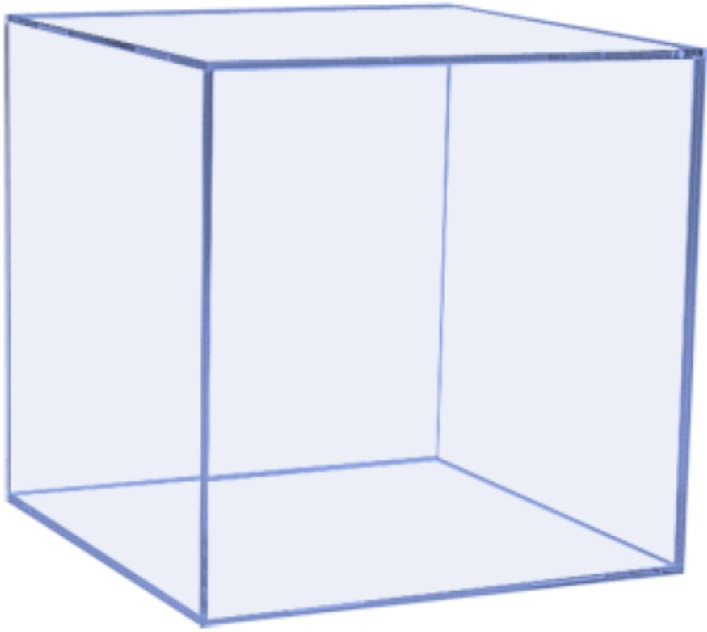
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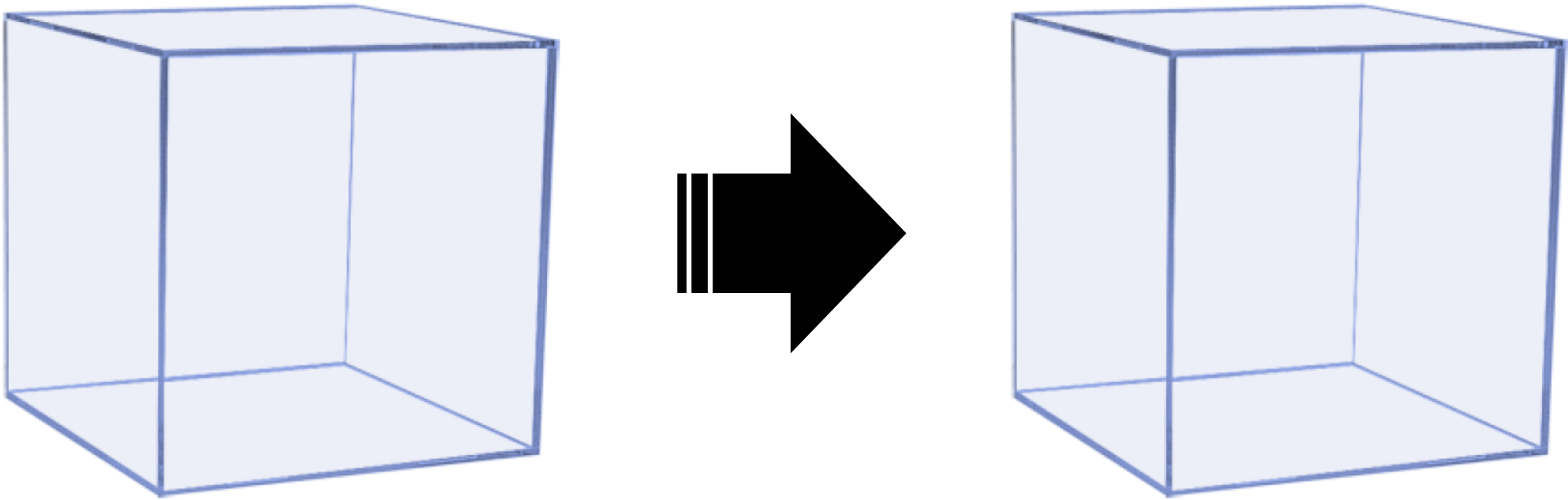
Motivation



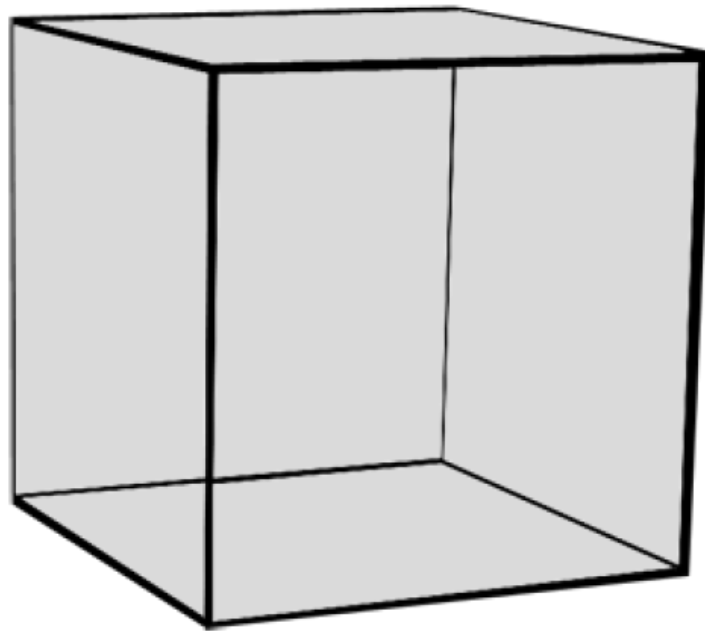
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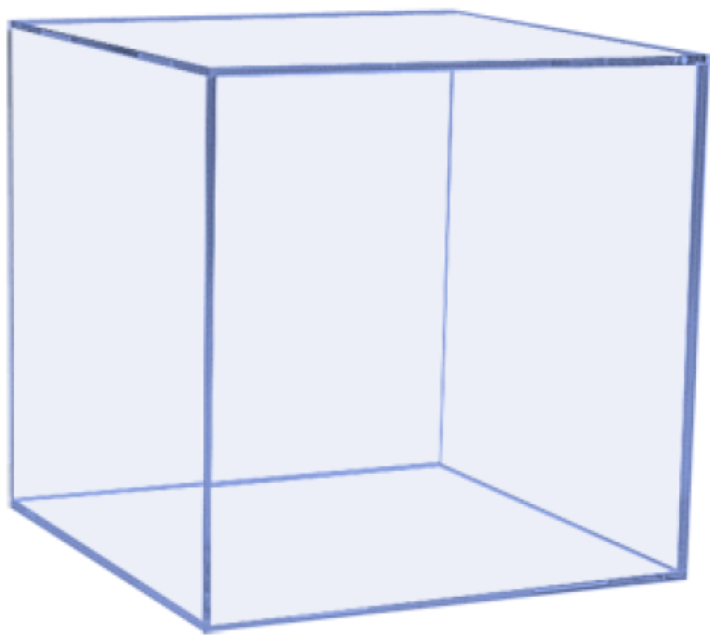
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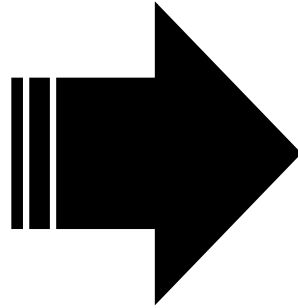
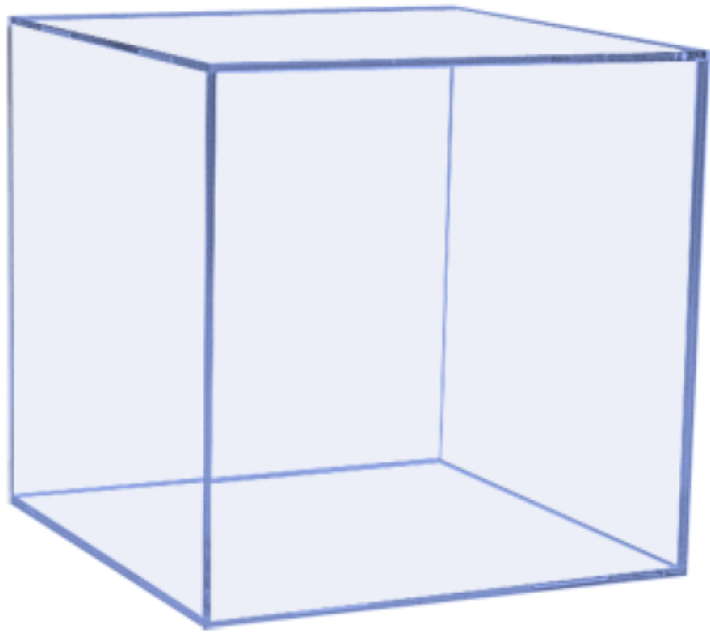
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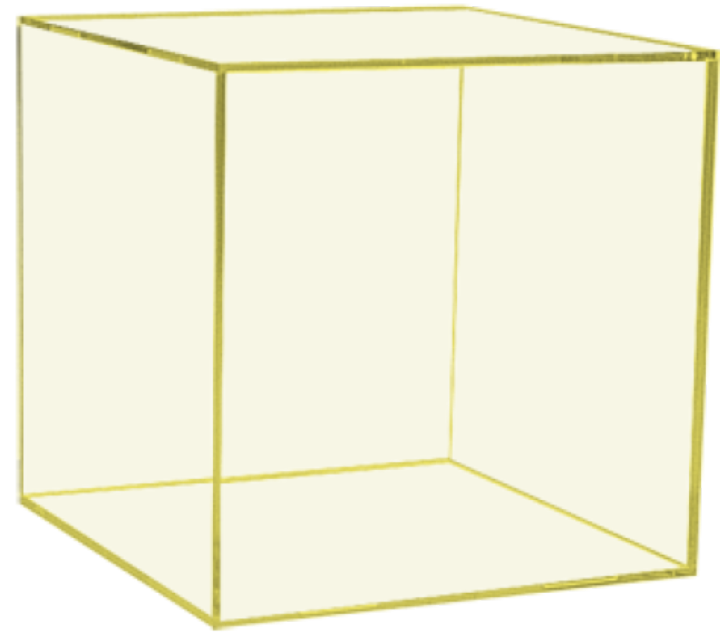
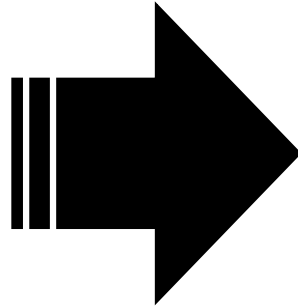
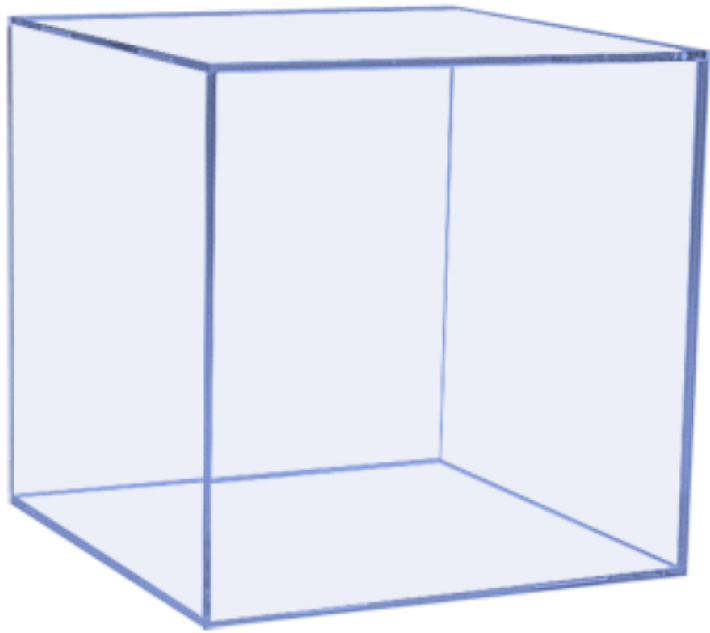
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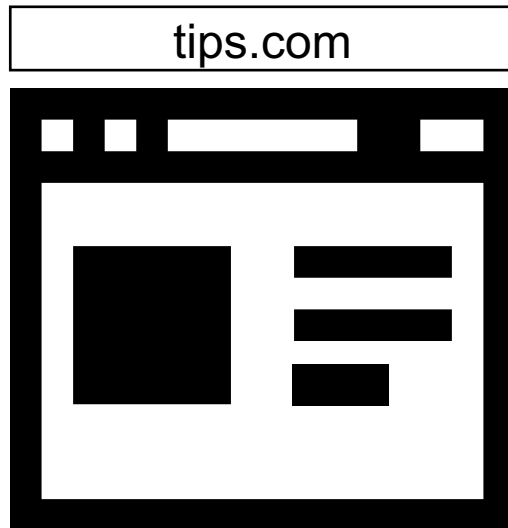


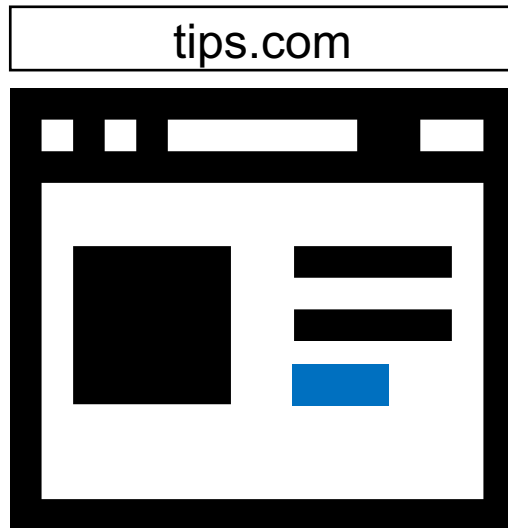
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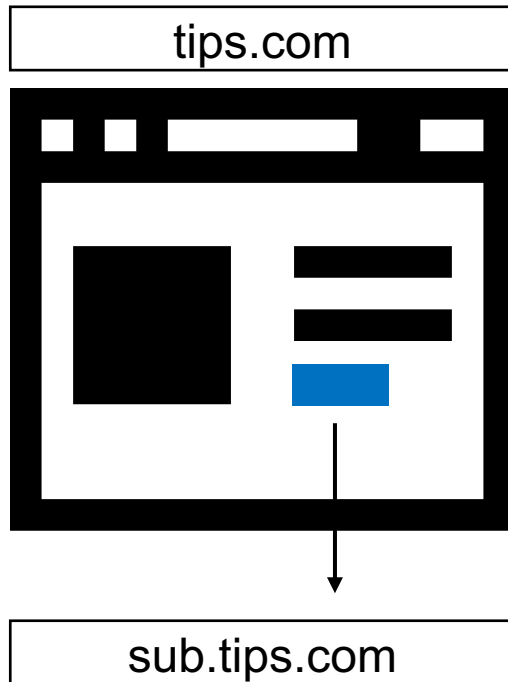


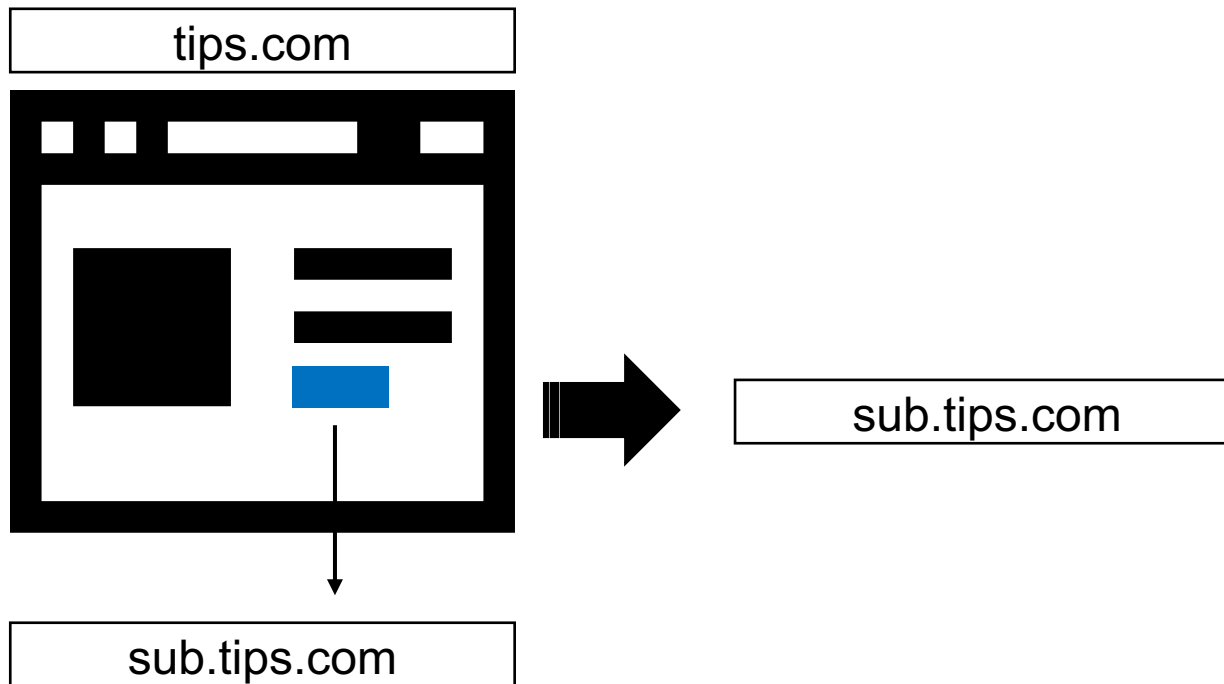
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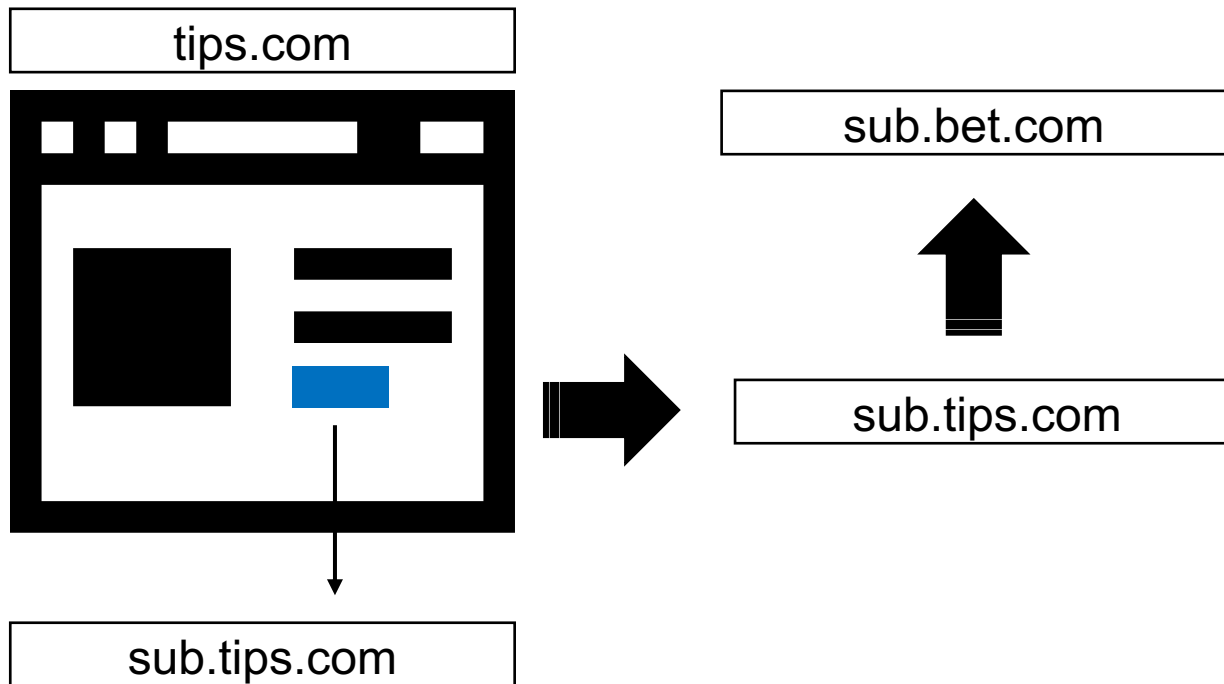


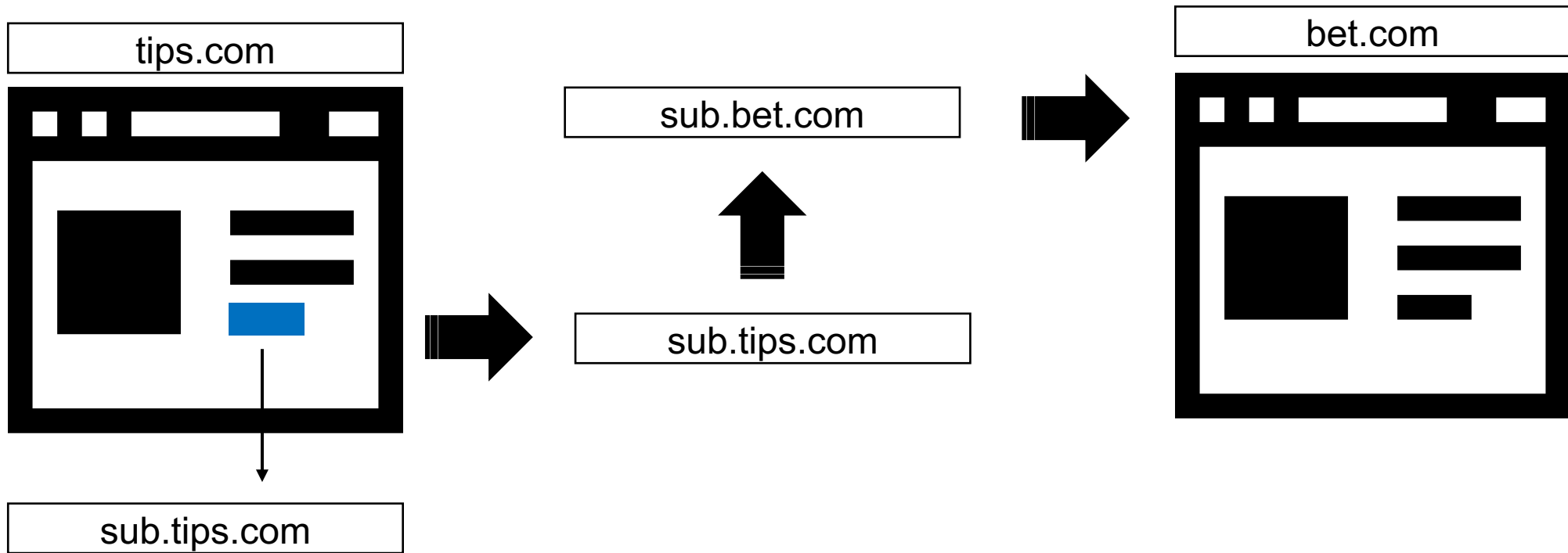


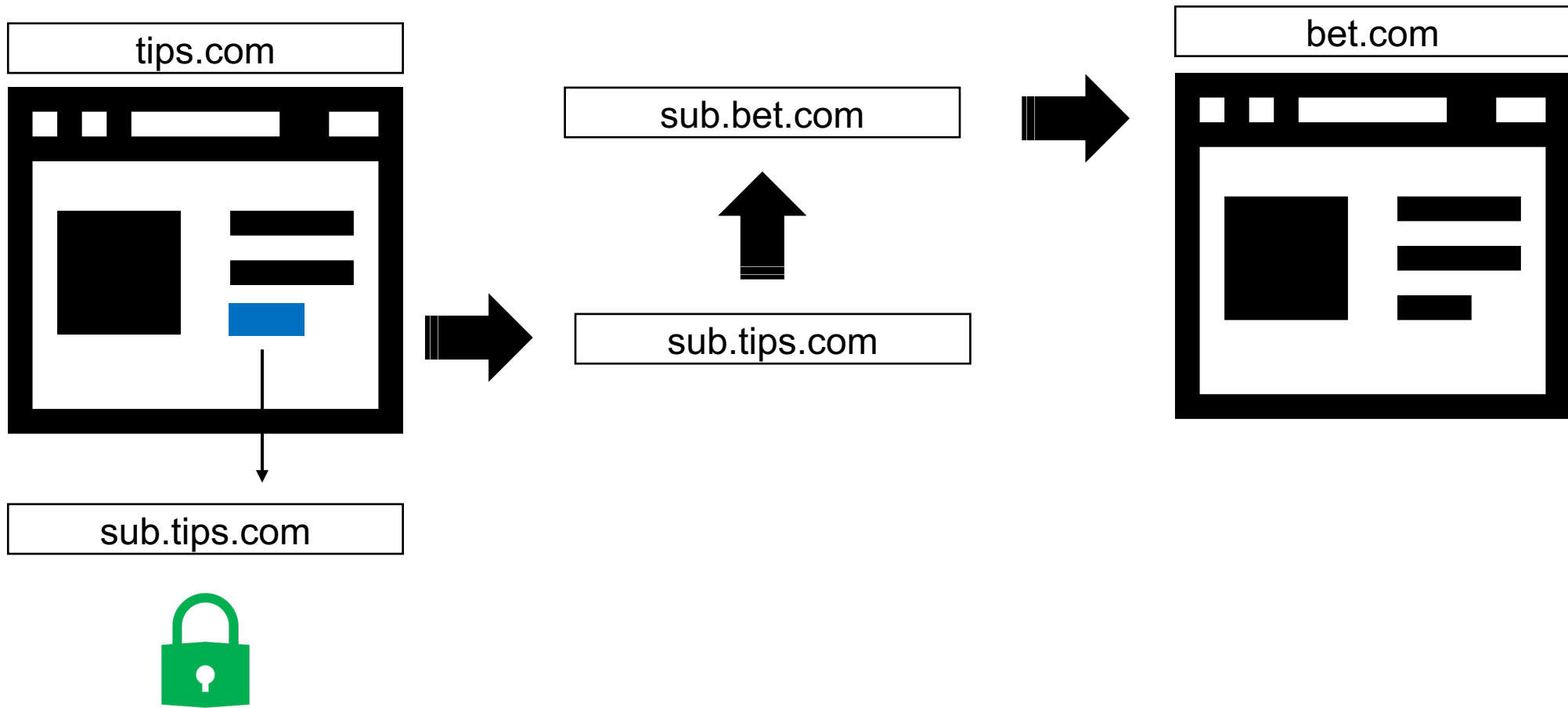


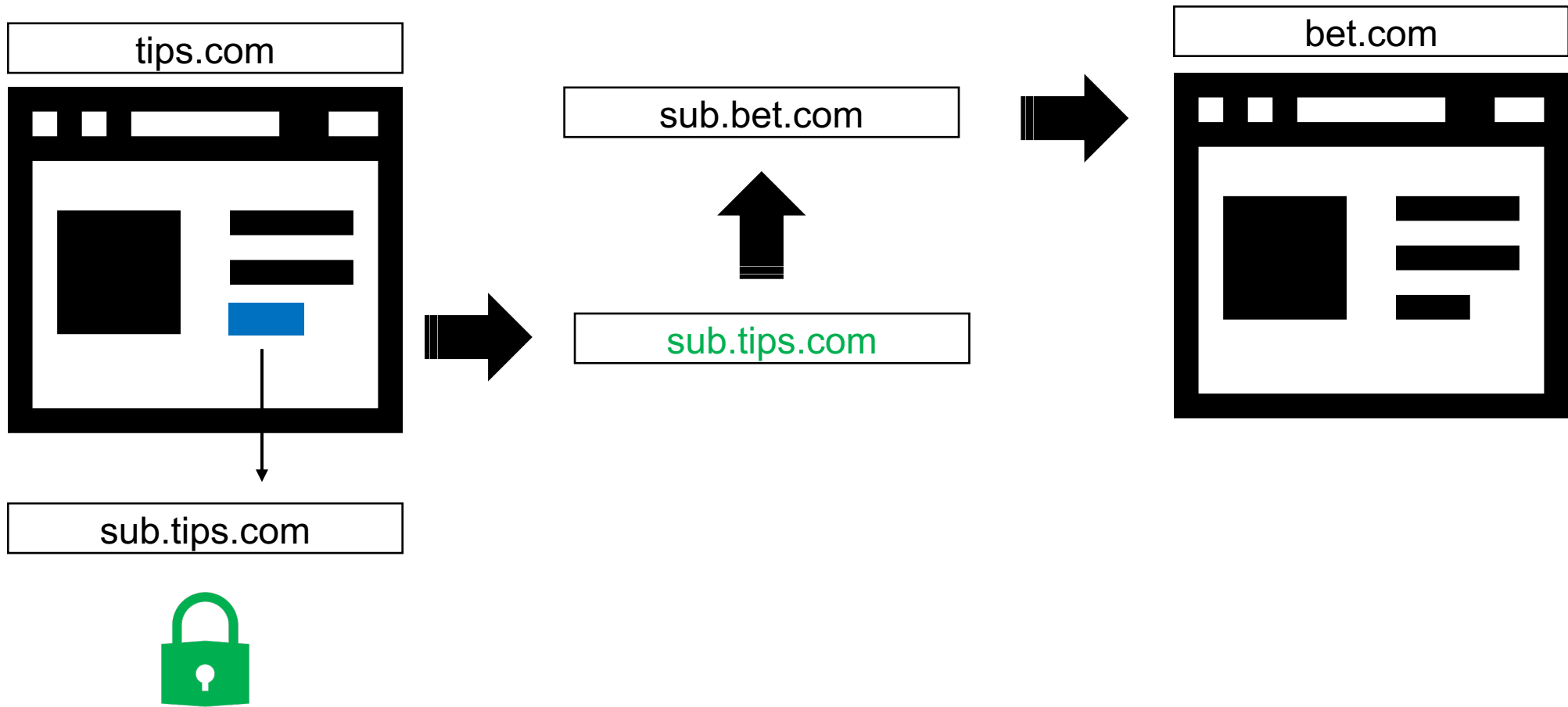


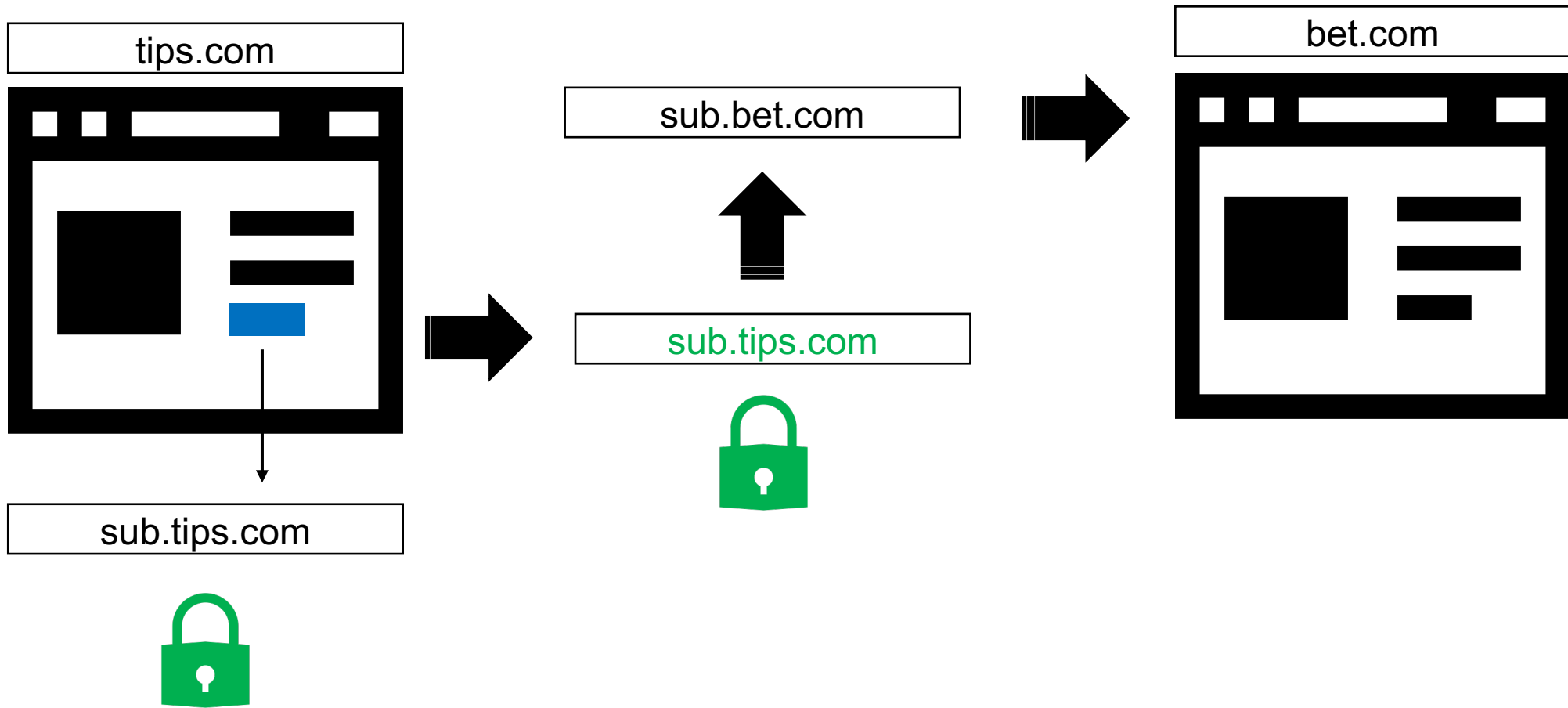


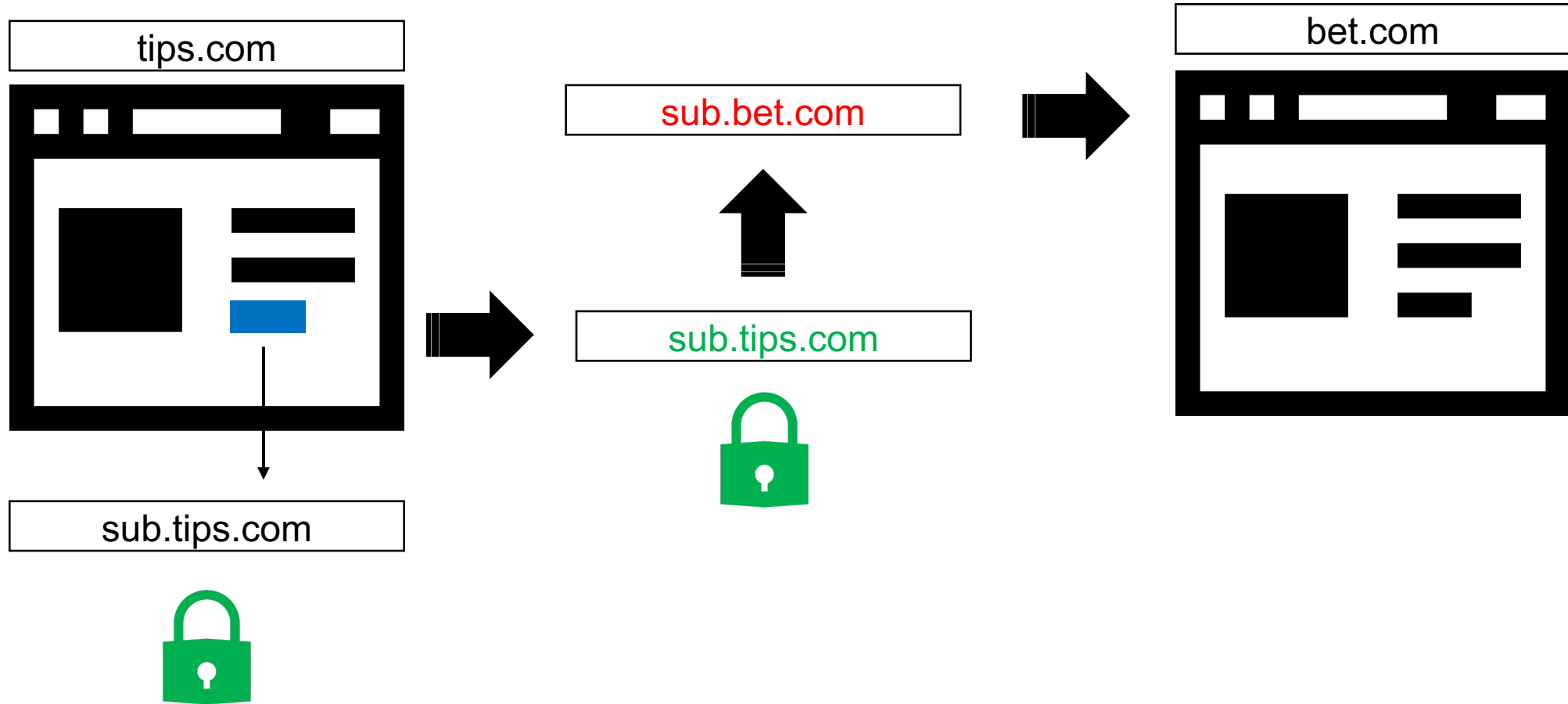


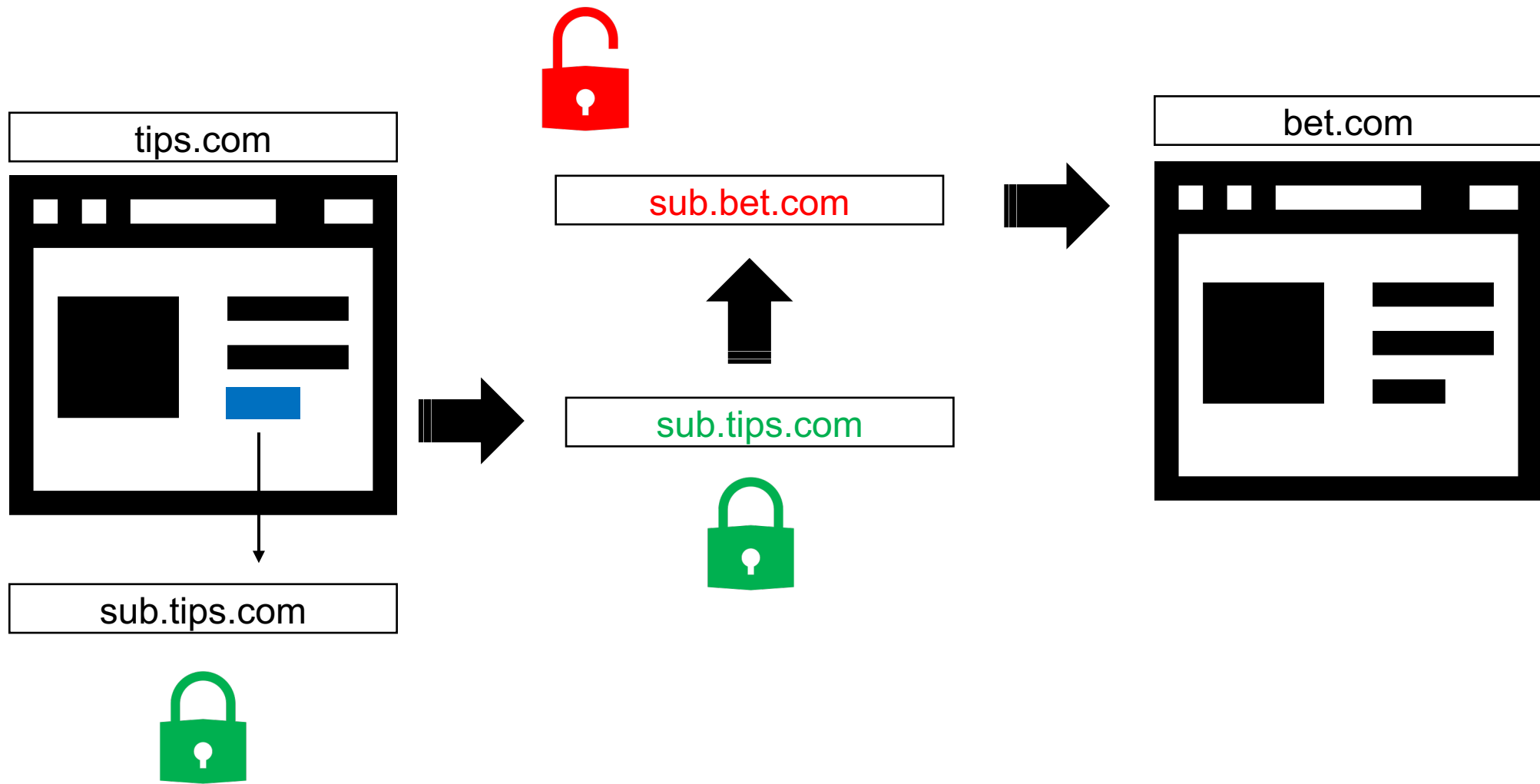


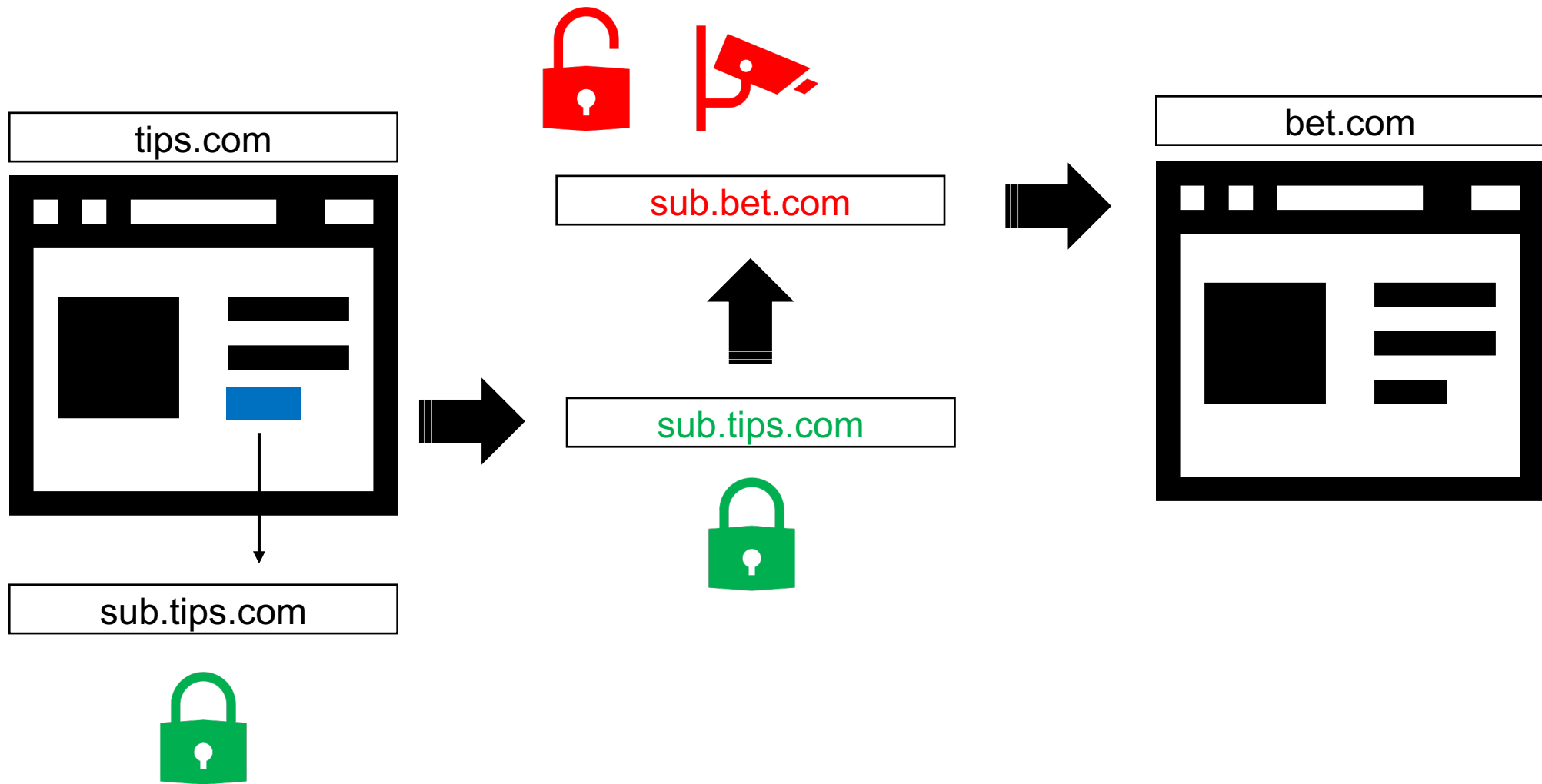


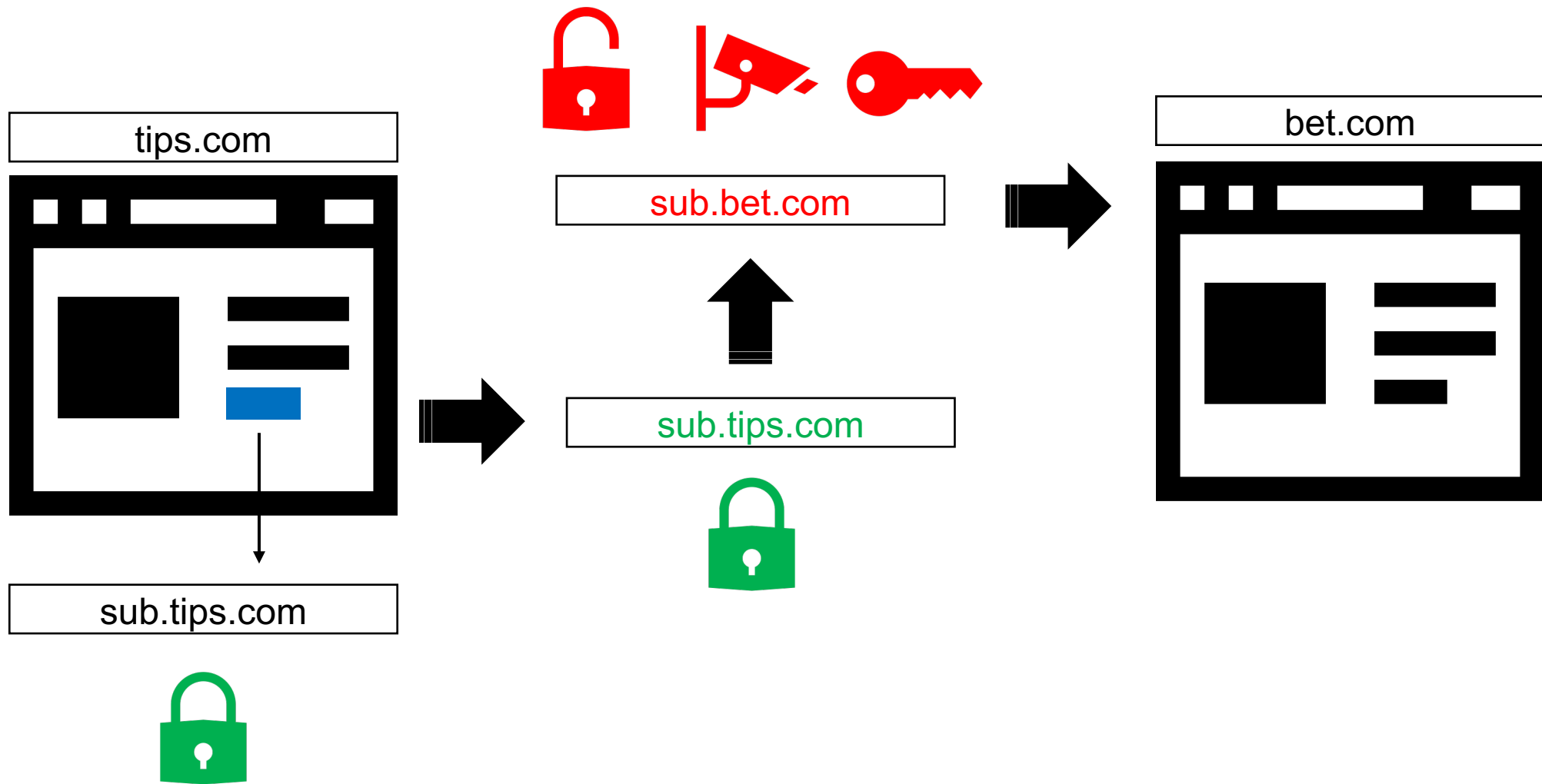


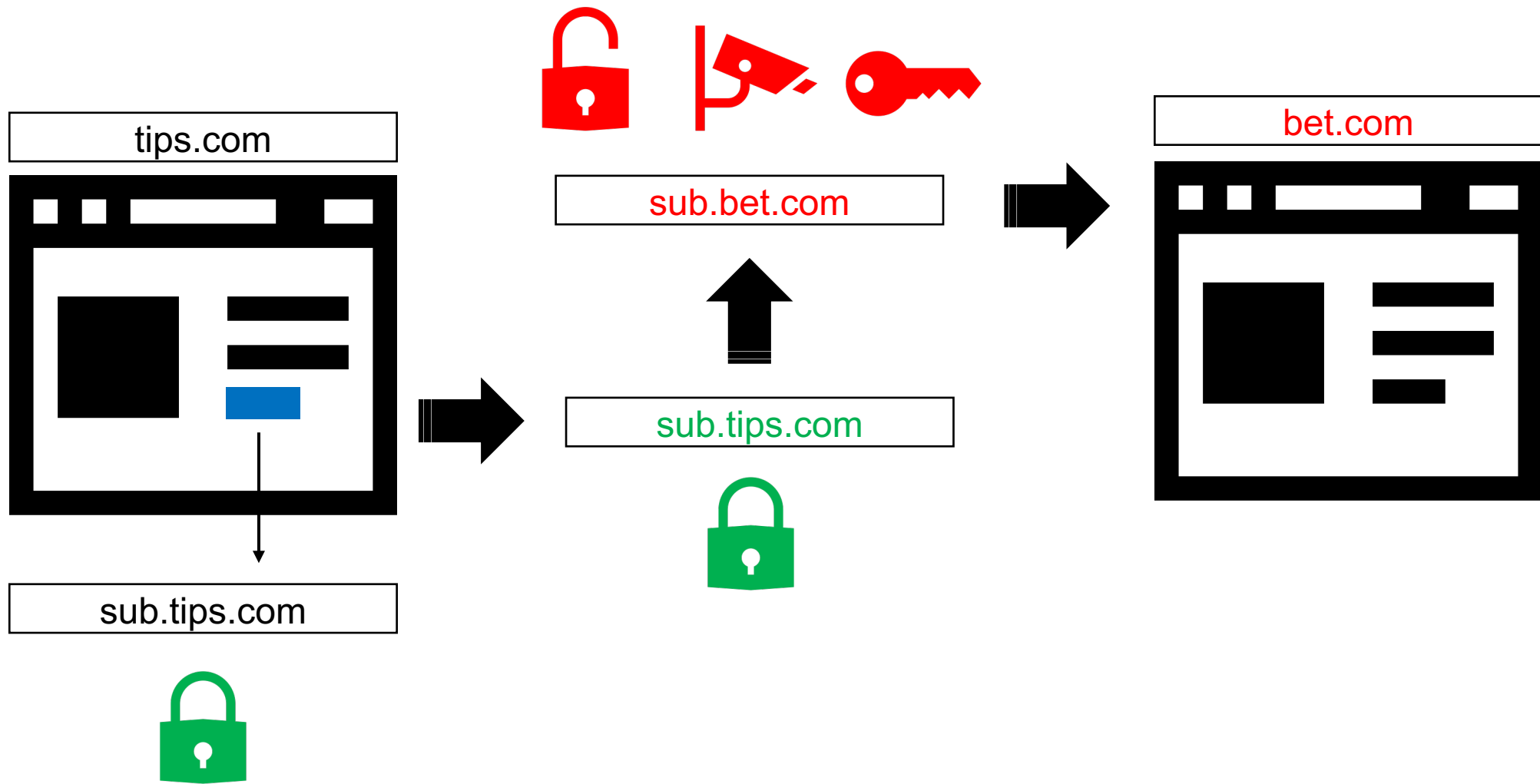


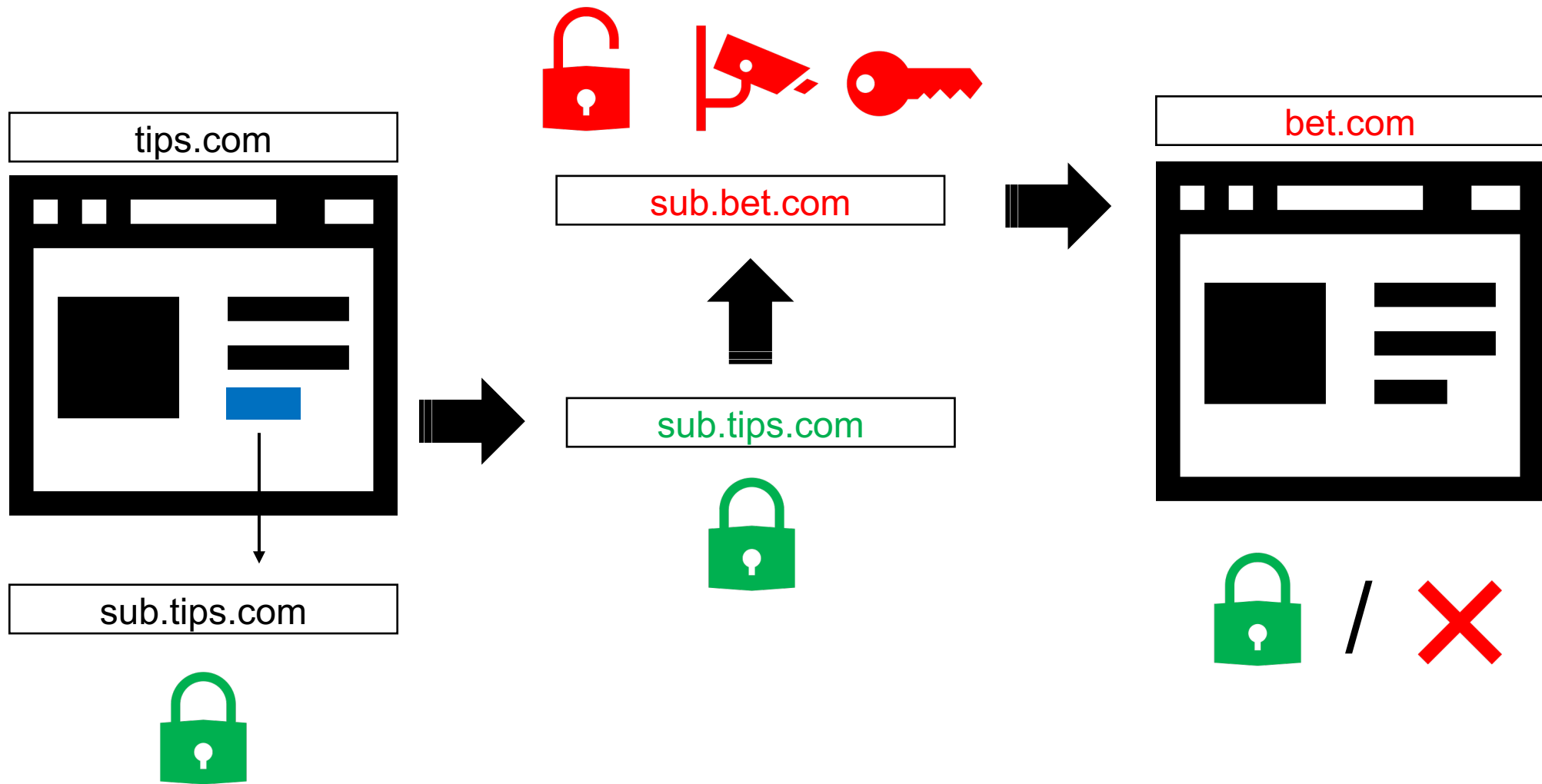












Click Contract



Click Contract

What You See
Is What You Get

Click Contract

Trust in the Endpoints

Contribution

2.5M Clicks

Chromium based Crawler

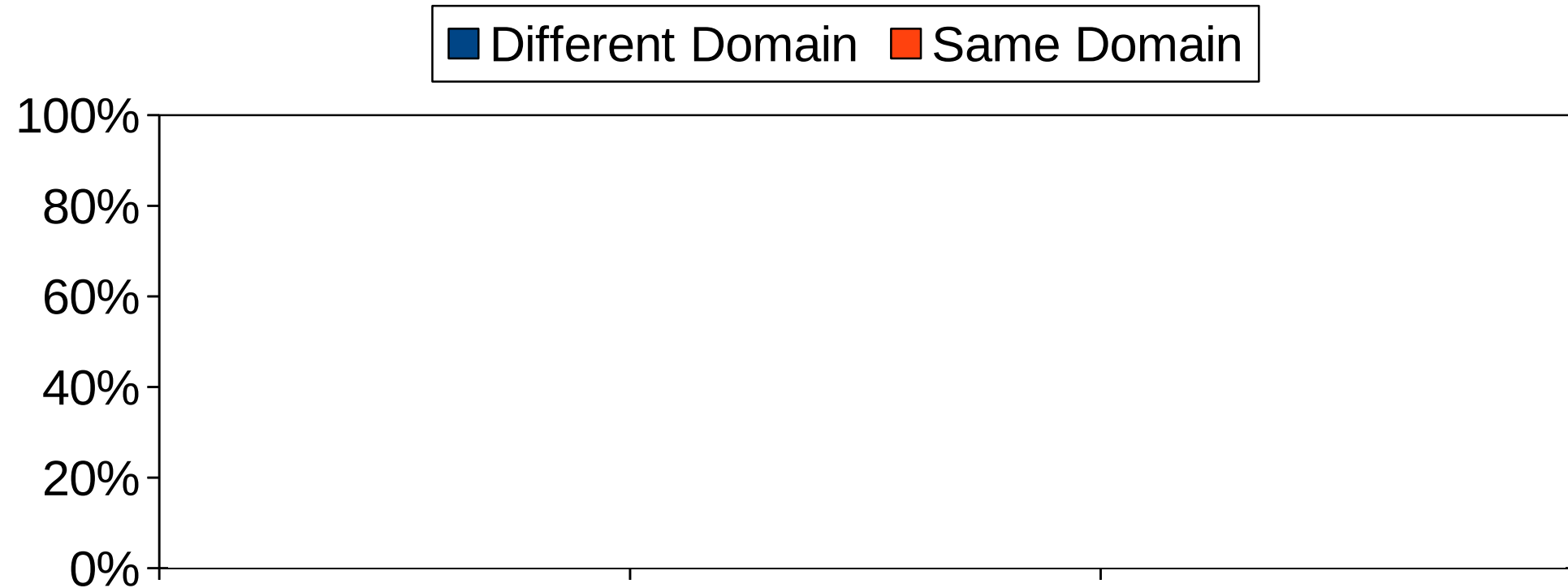
Contribution



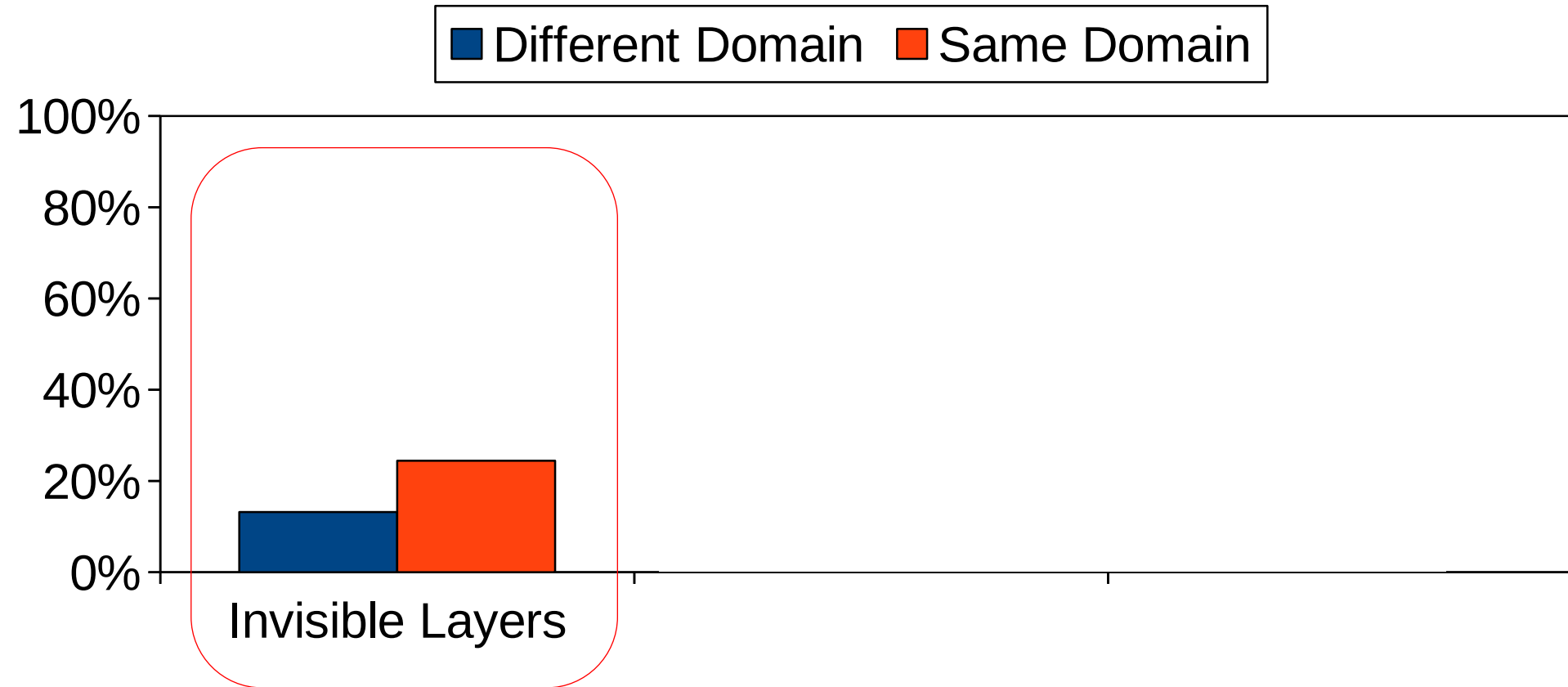
Misleading Targets



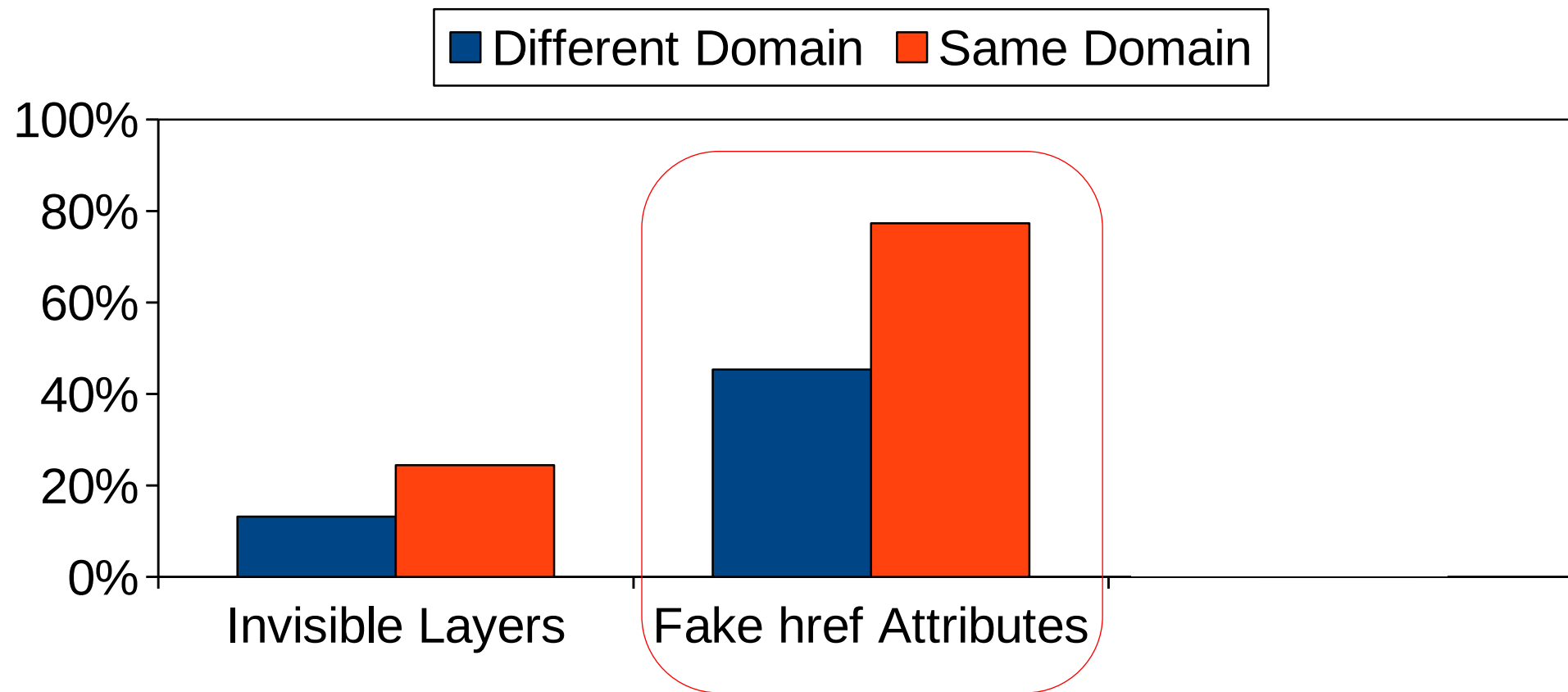
Misleading Targets



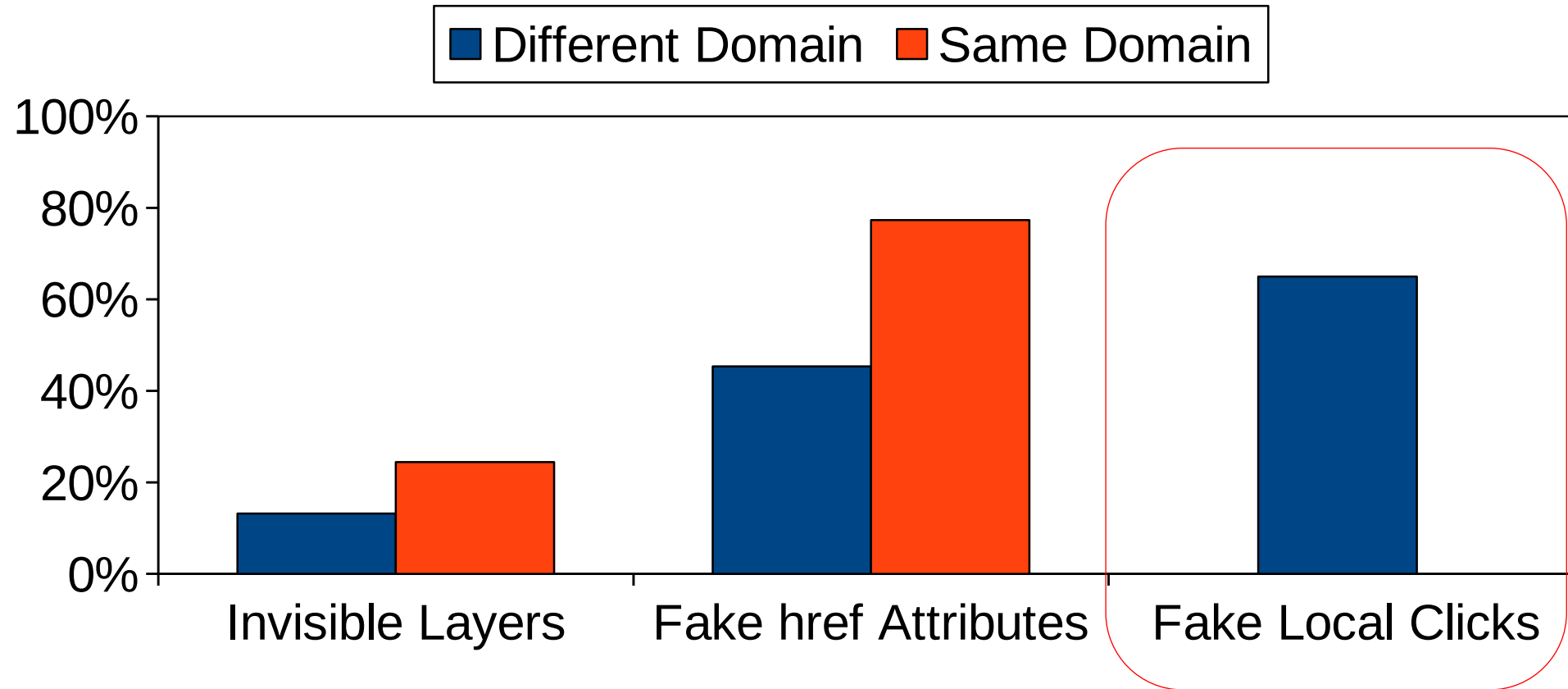
Misleading Targets



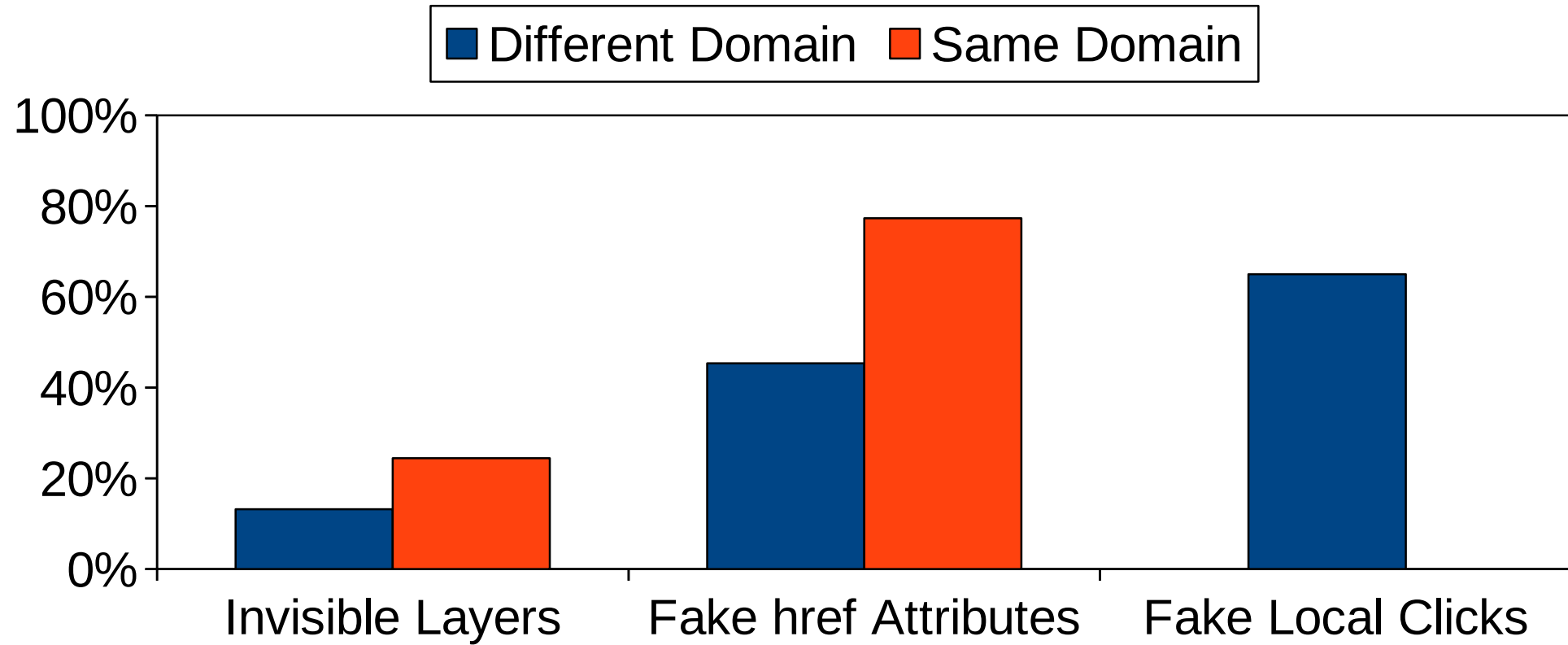
Misleading Targets



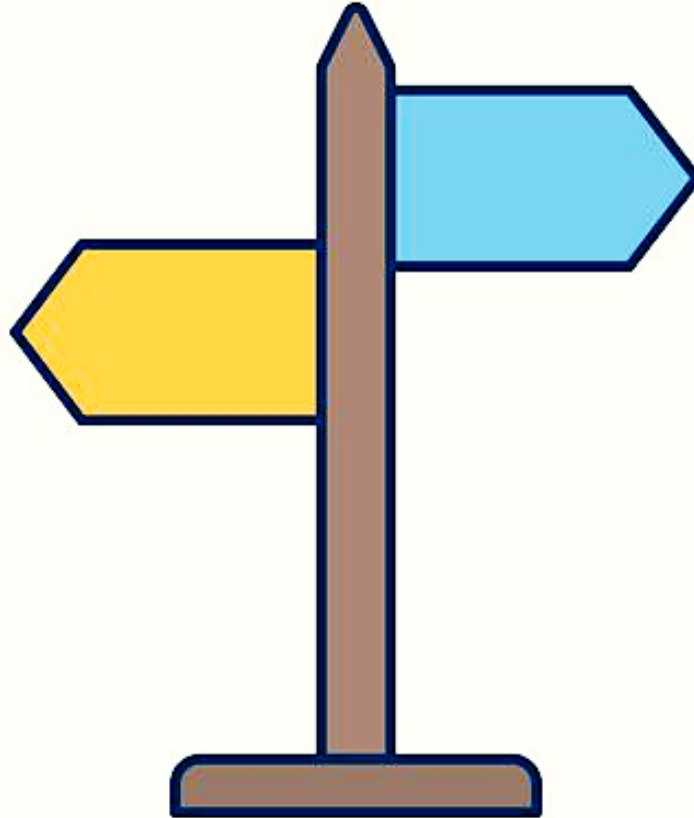
Misleading Targets



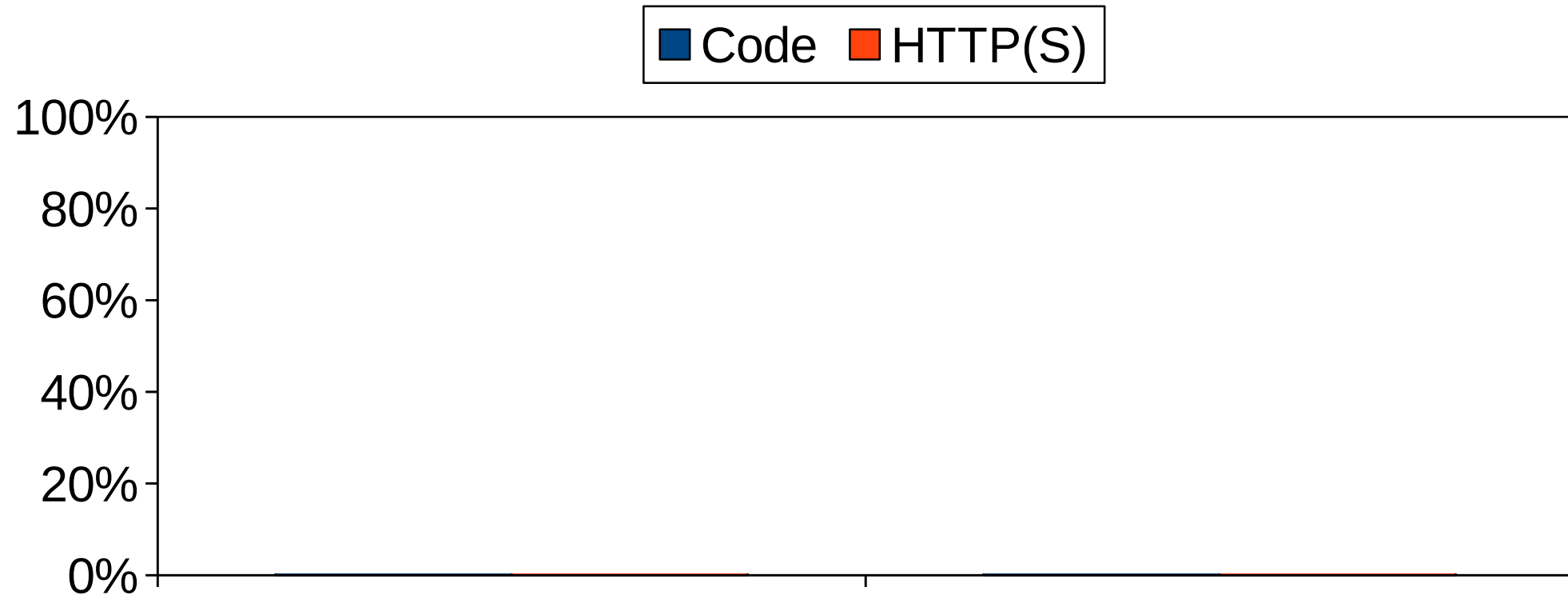
Misleading Targets



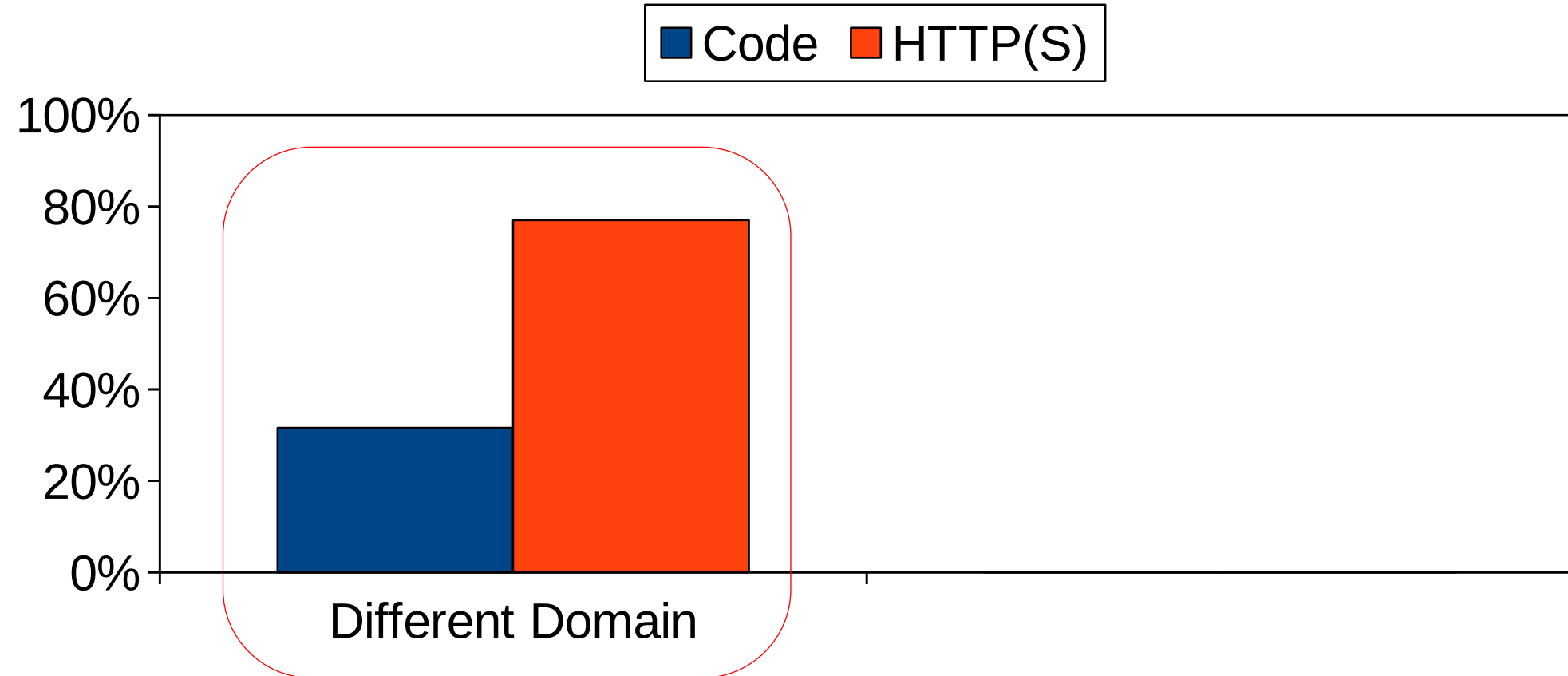
User Redirection



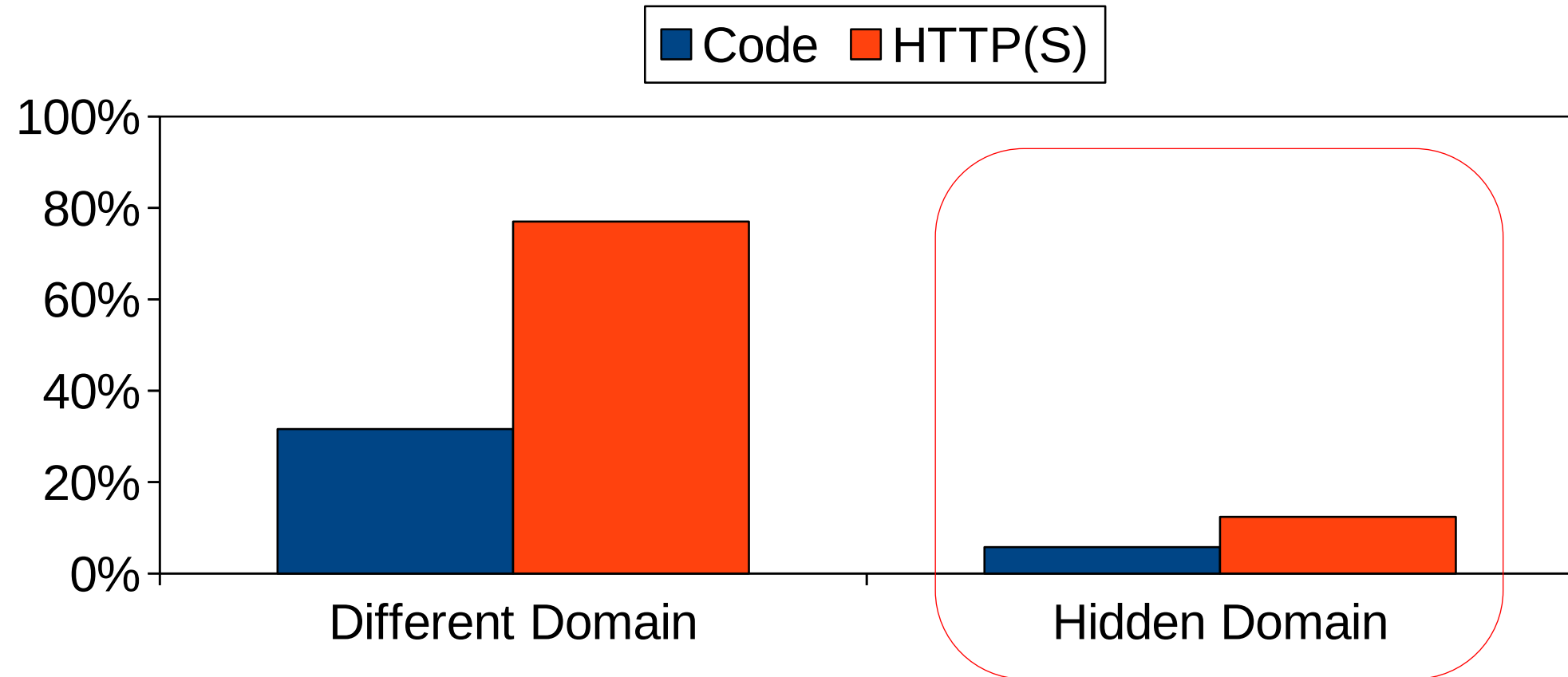
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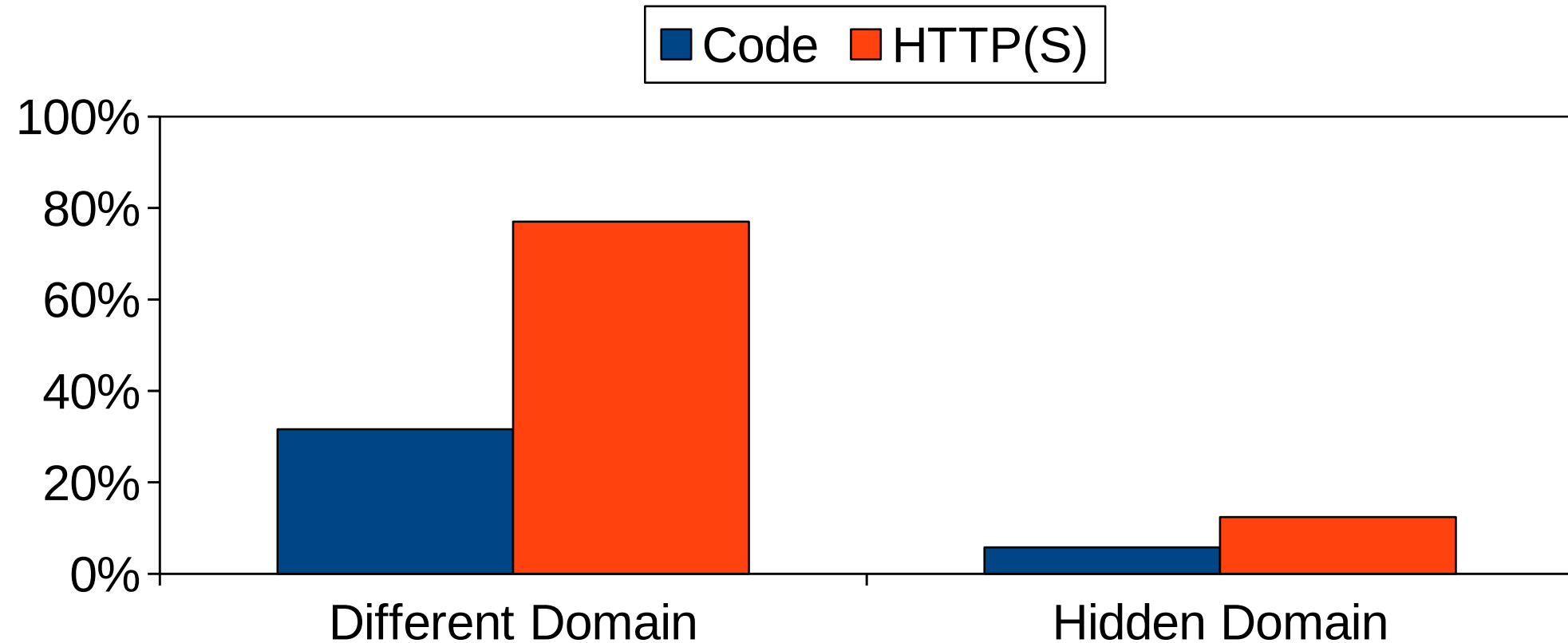
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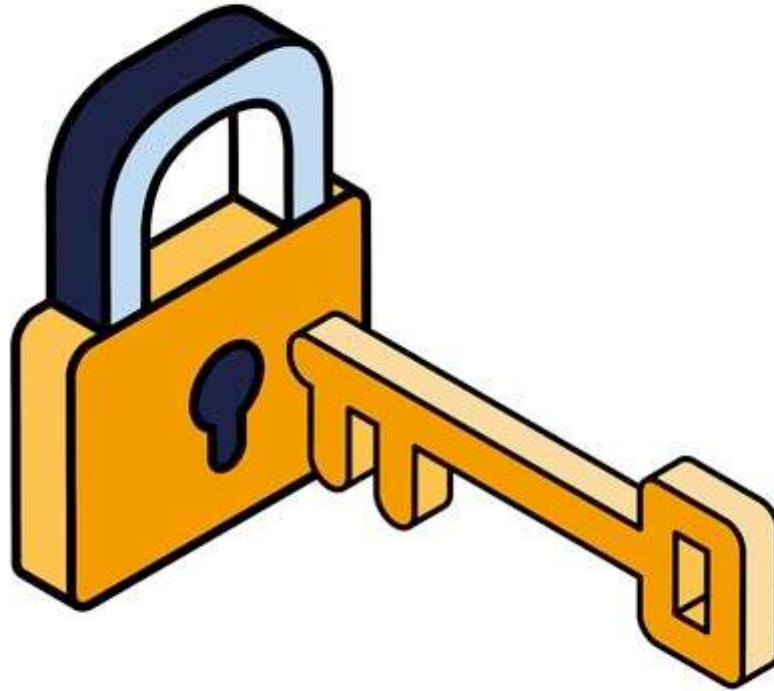
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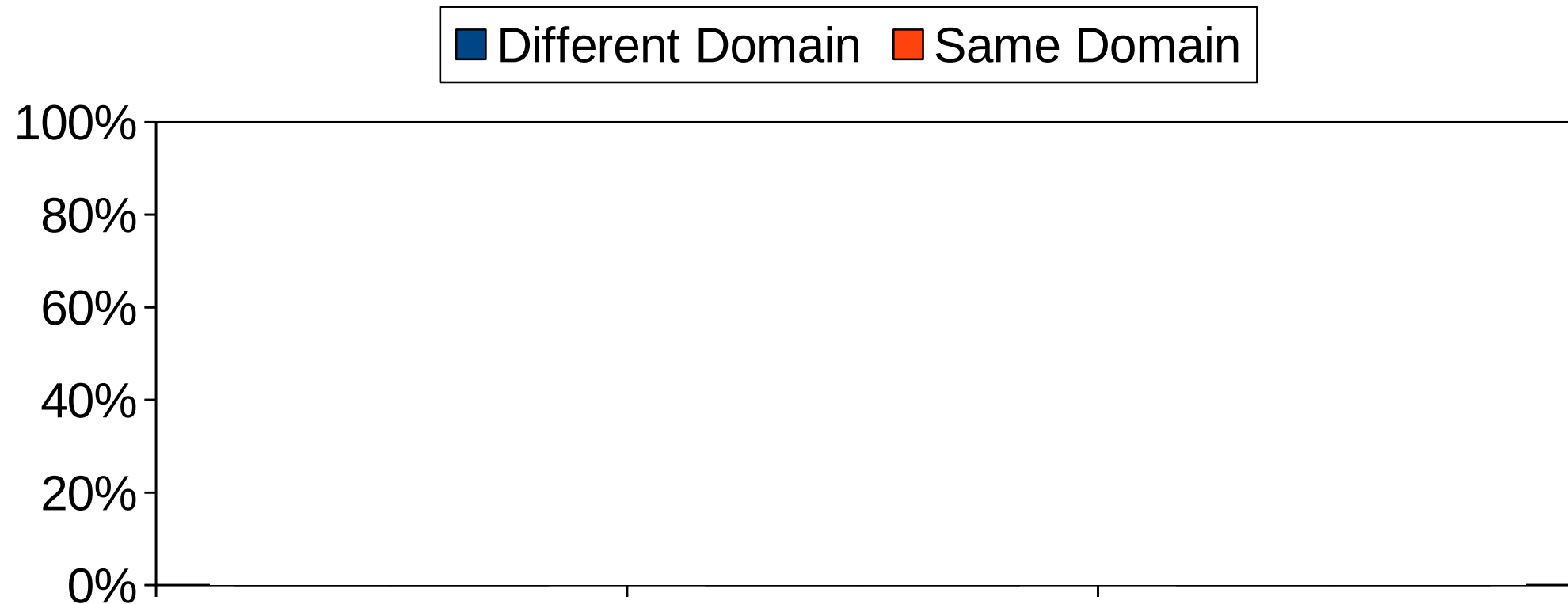
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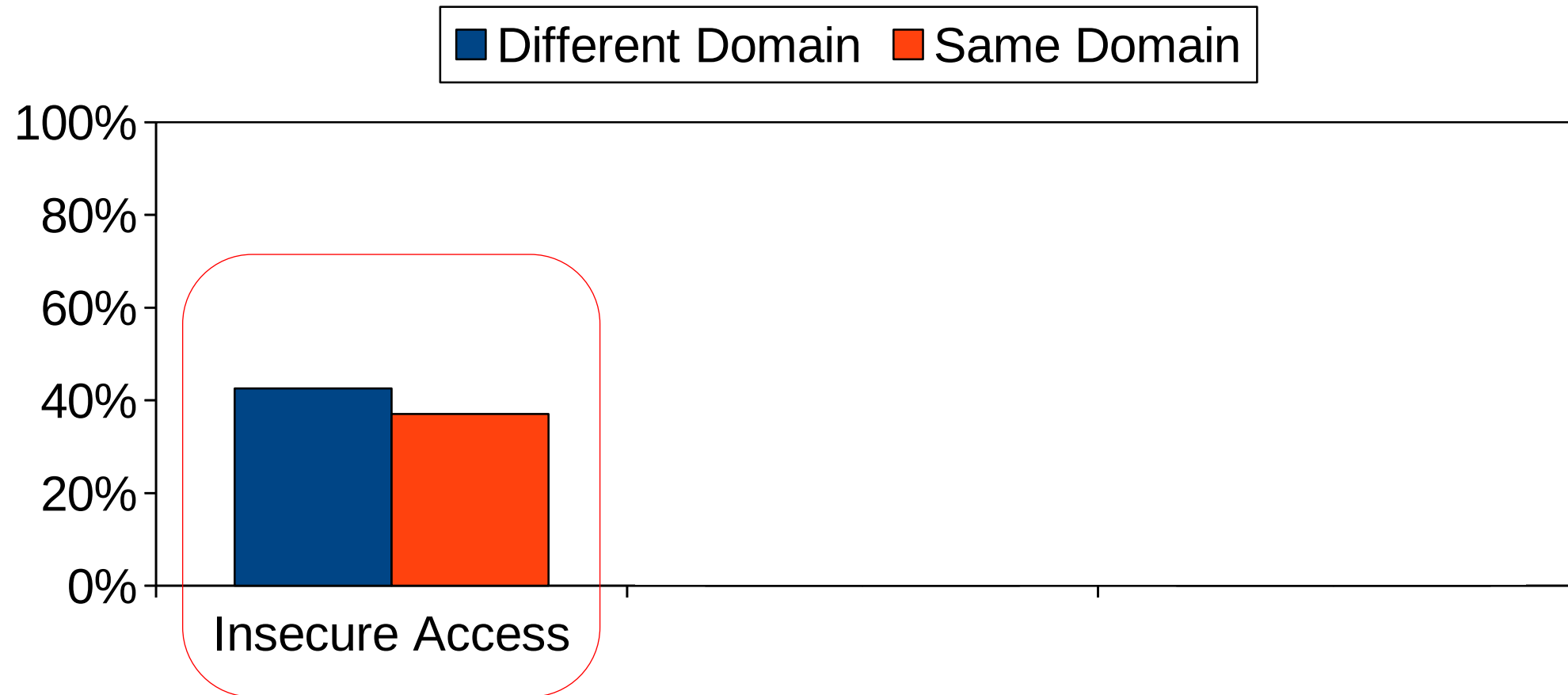
Insecure Communication



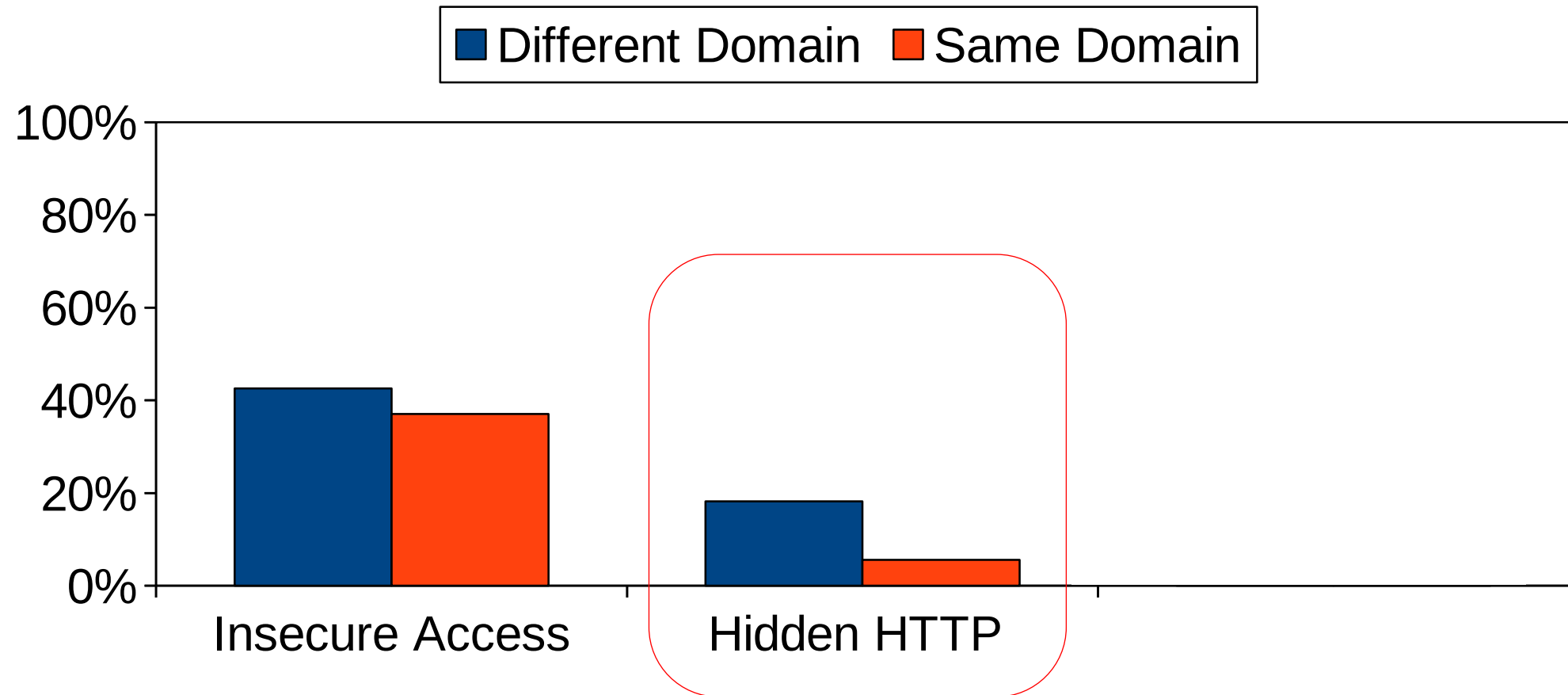
Insecure Communication



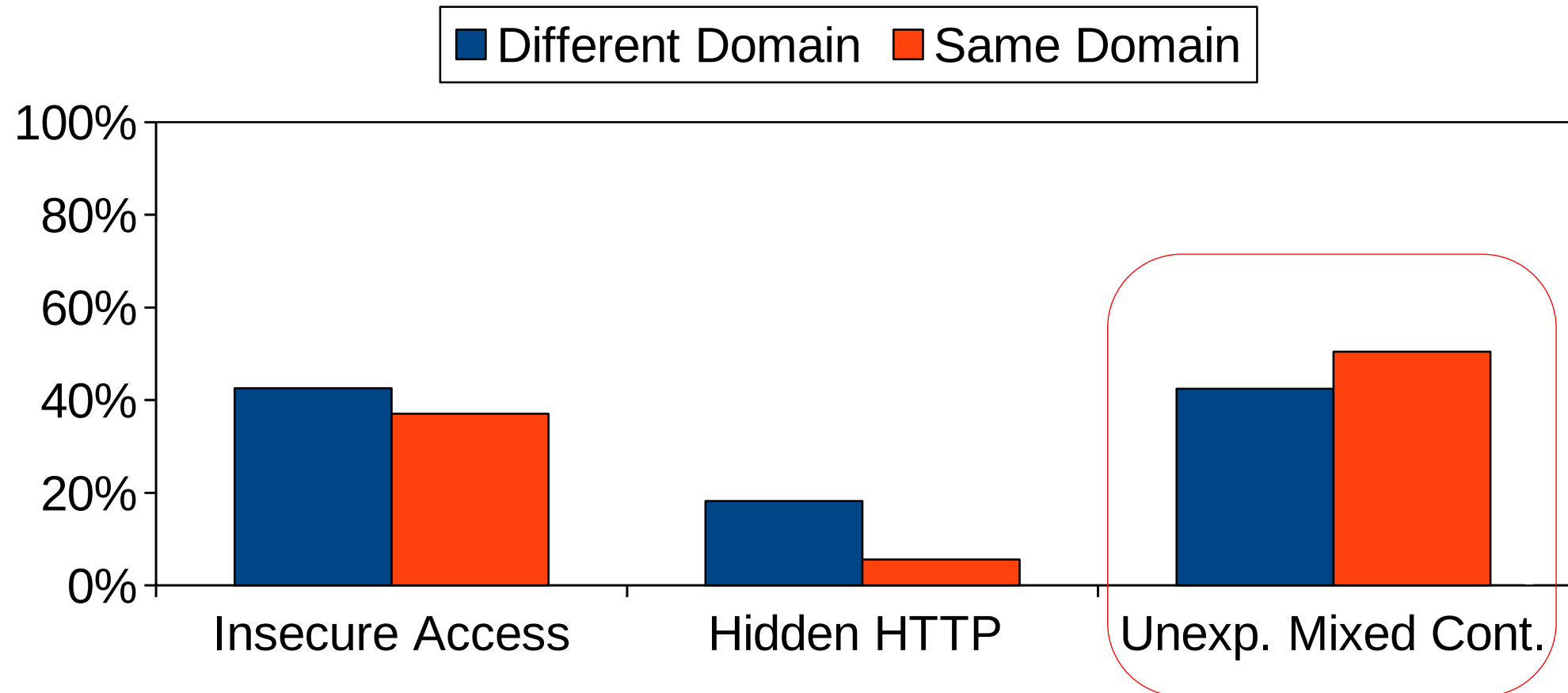
Insecure Communication



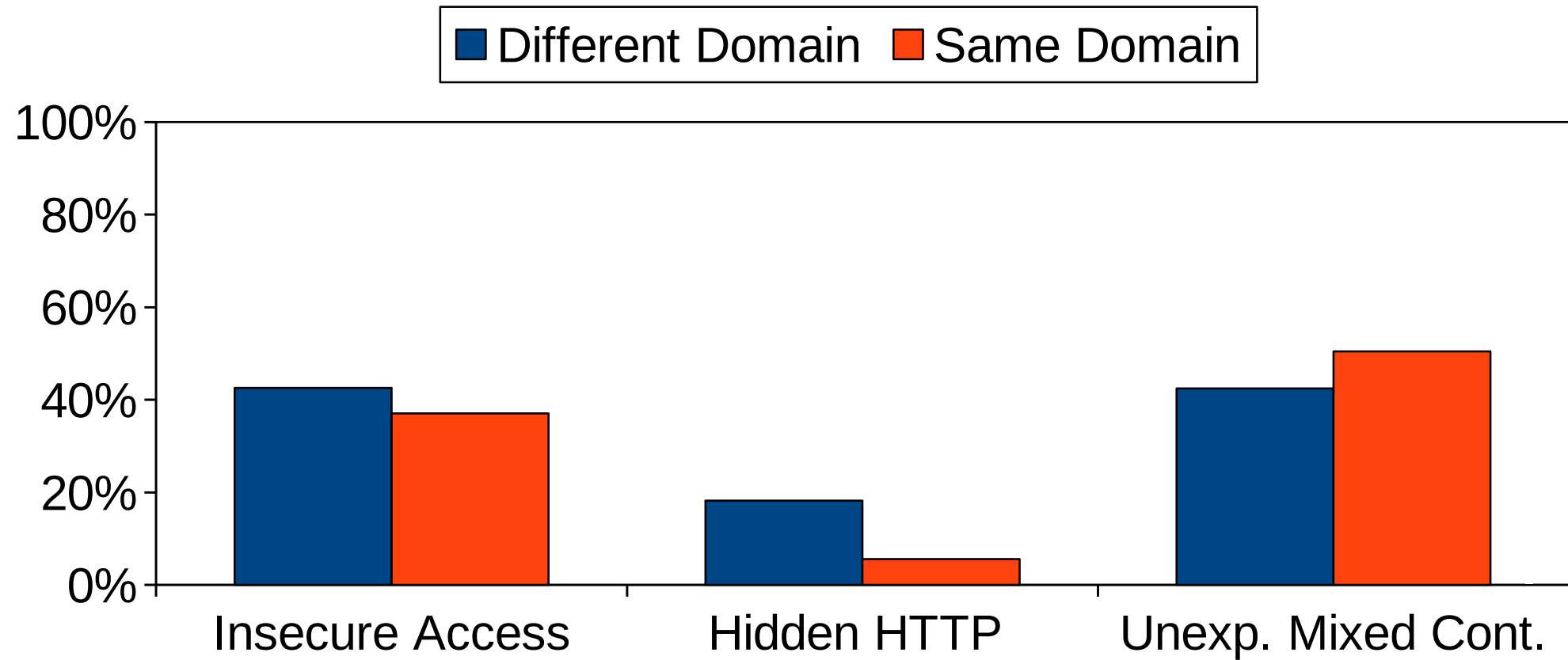
Insecure Communication



Insecure Communication

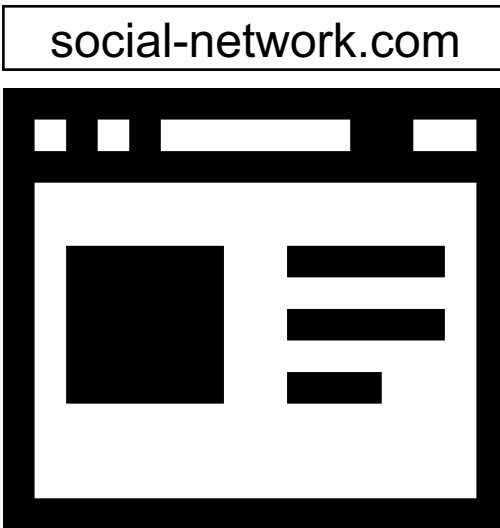


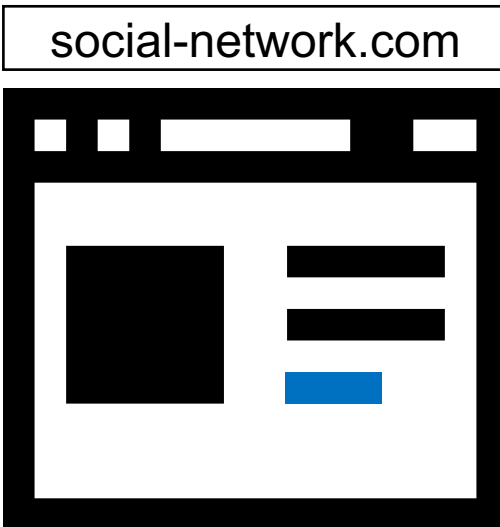
Insecure Communication

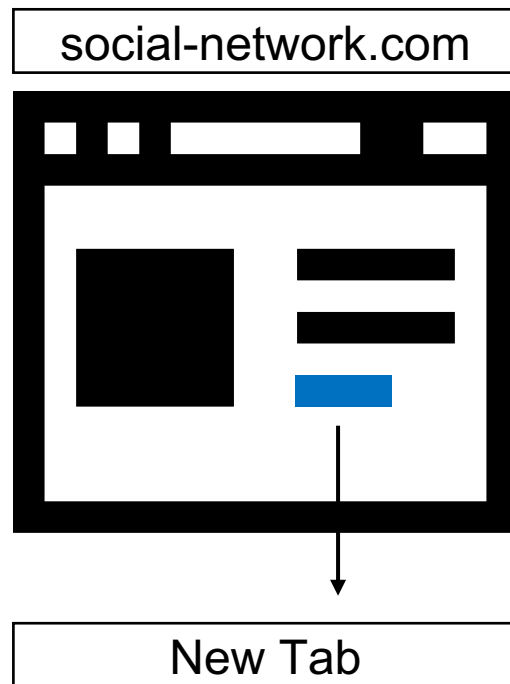


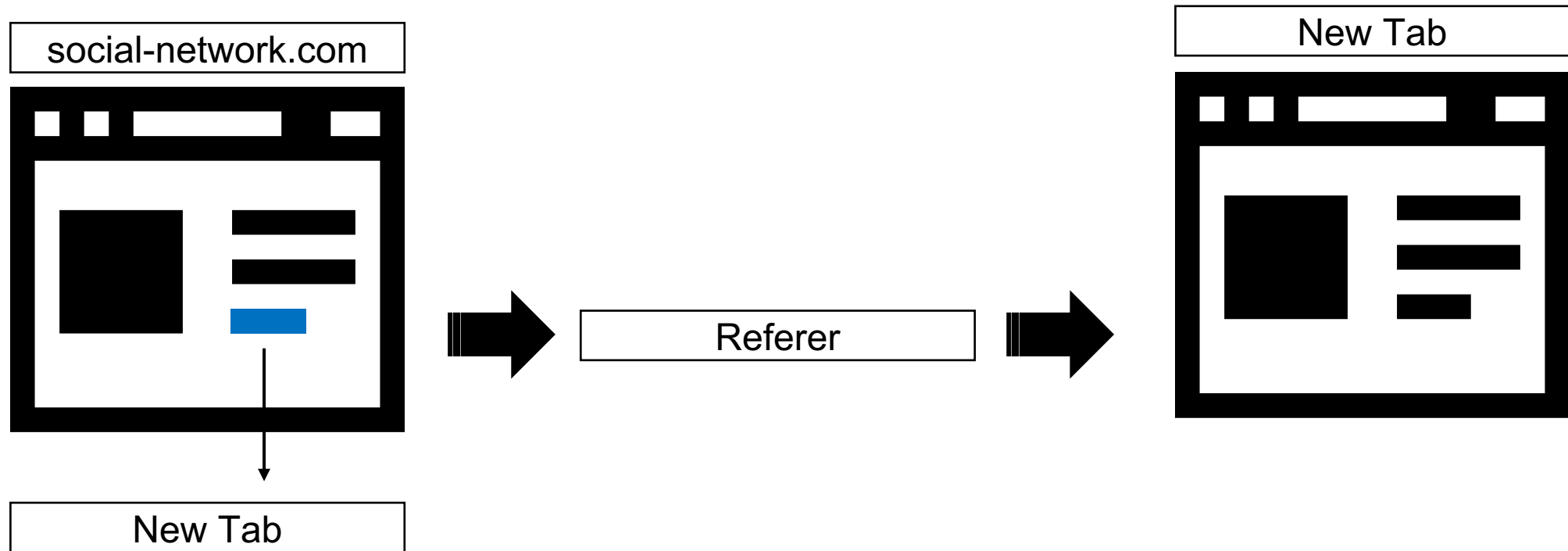
Phishing Threats

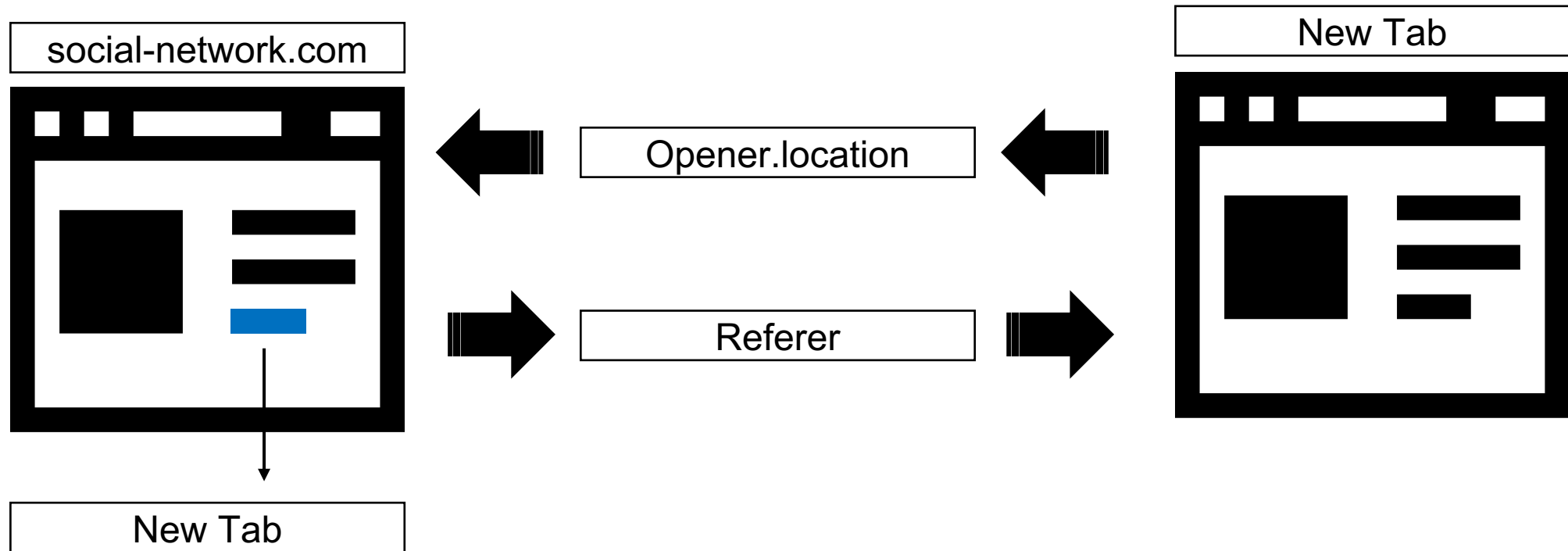


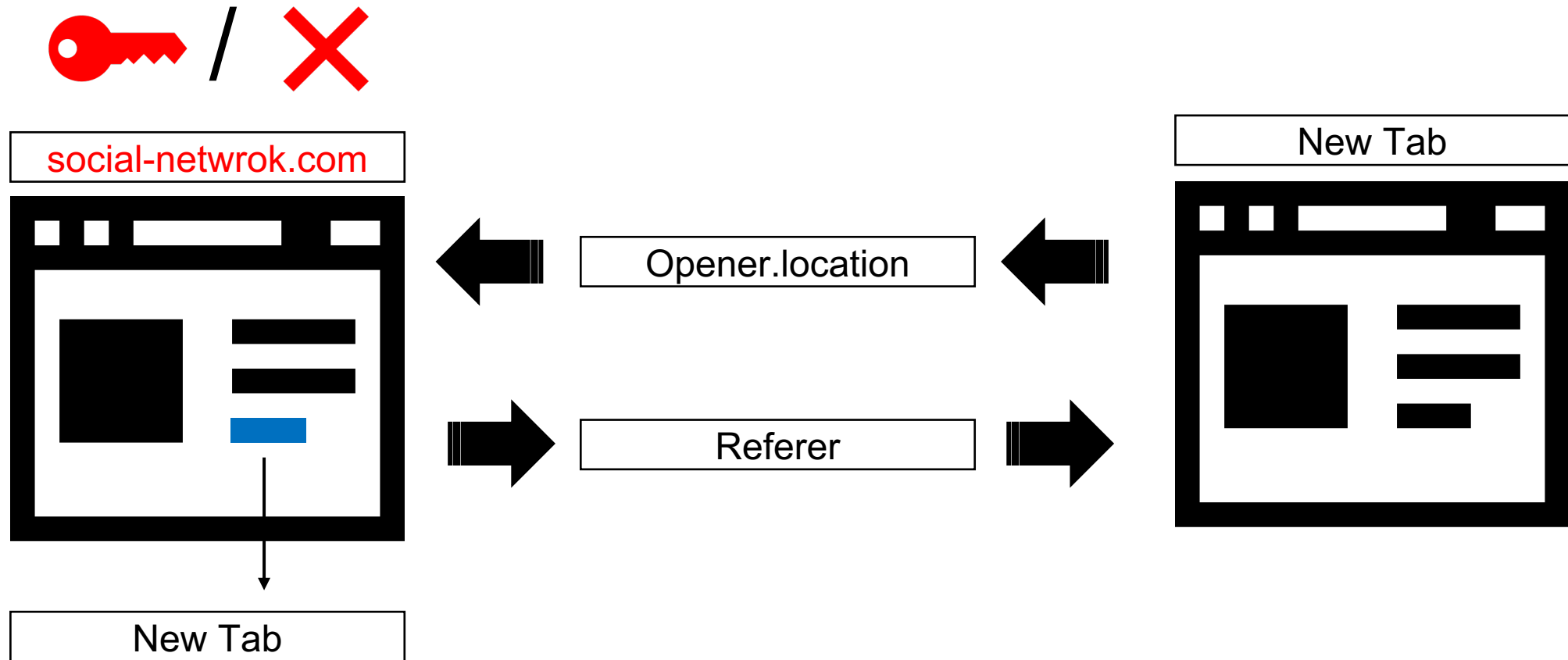


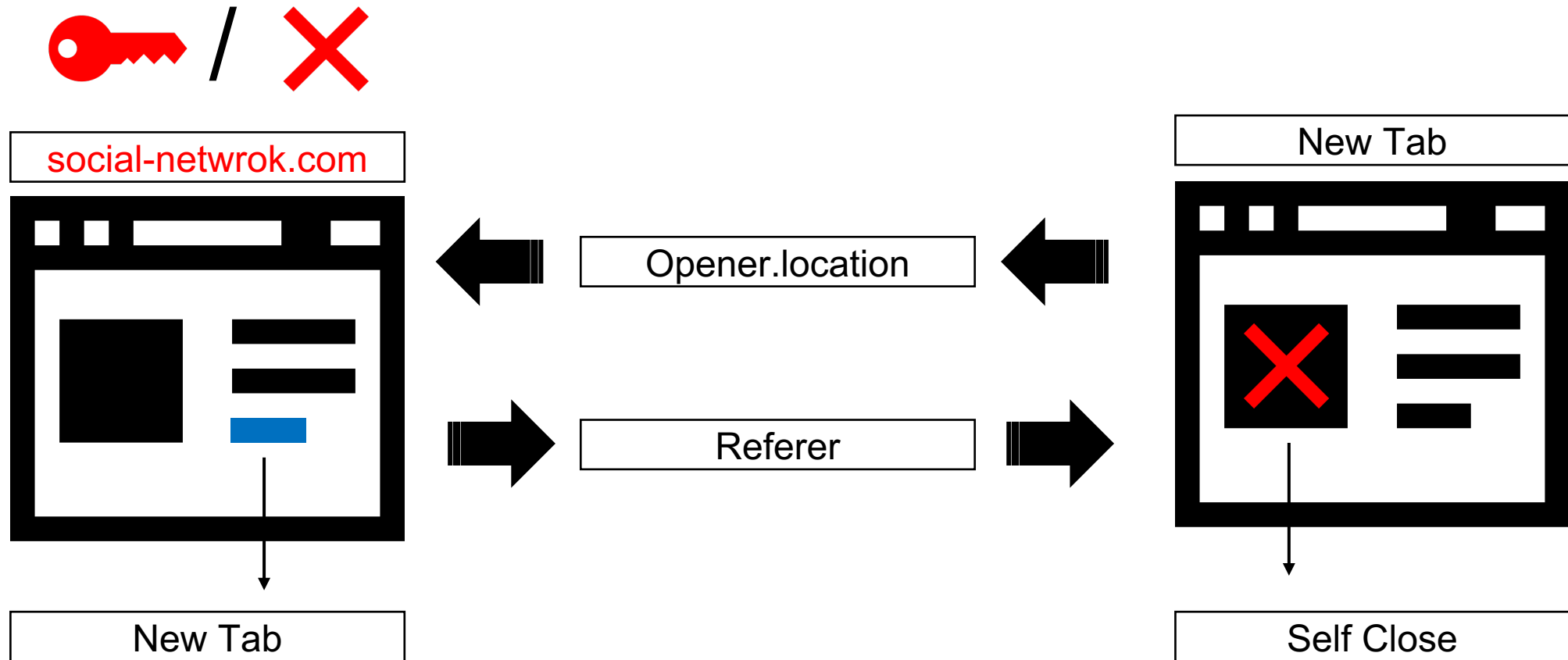










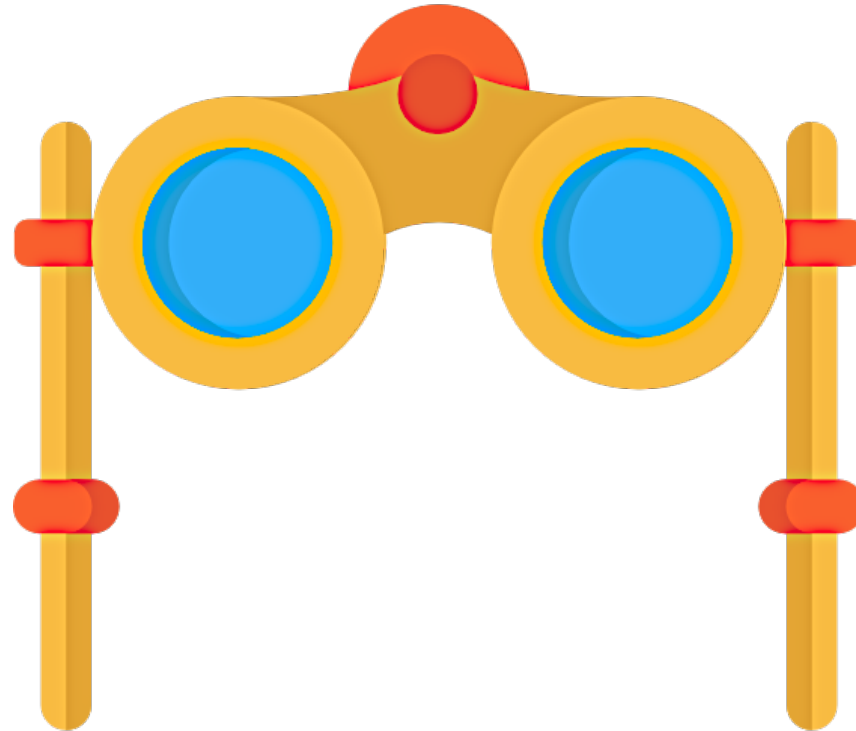


Phishing Threats

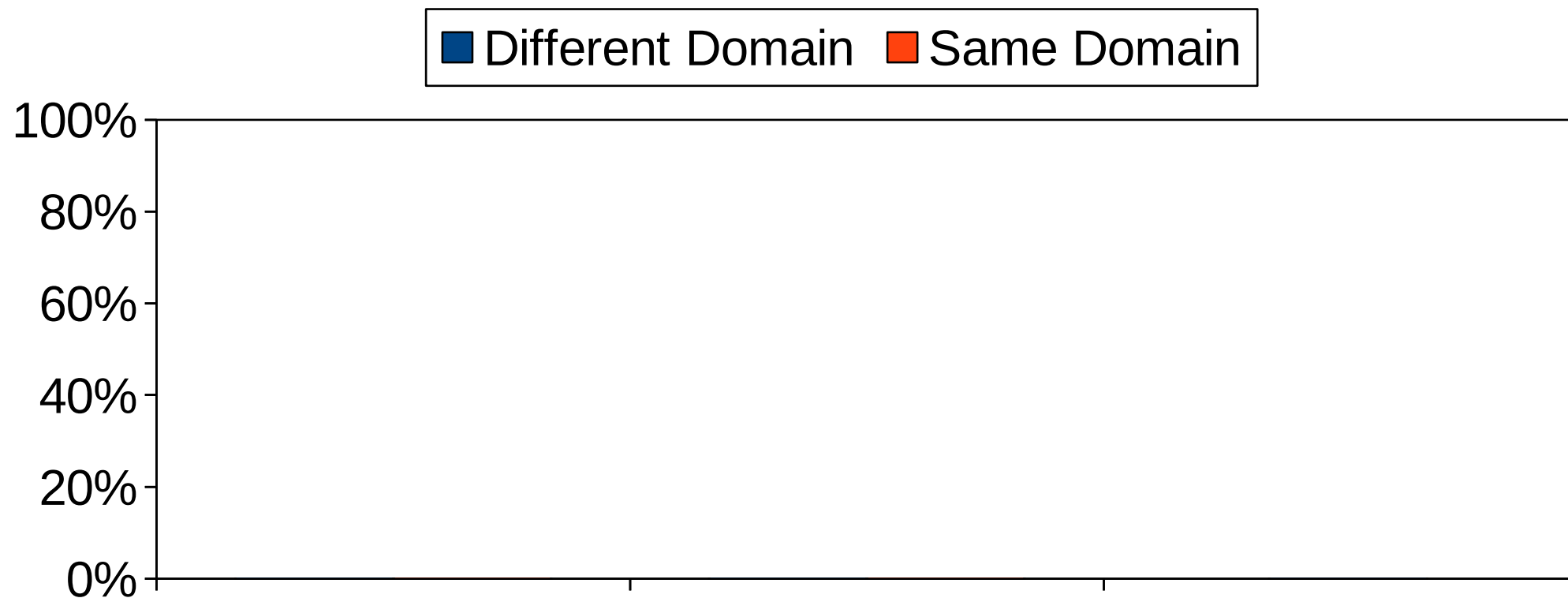
2% Protected

90% Opened New Tabs

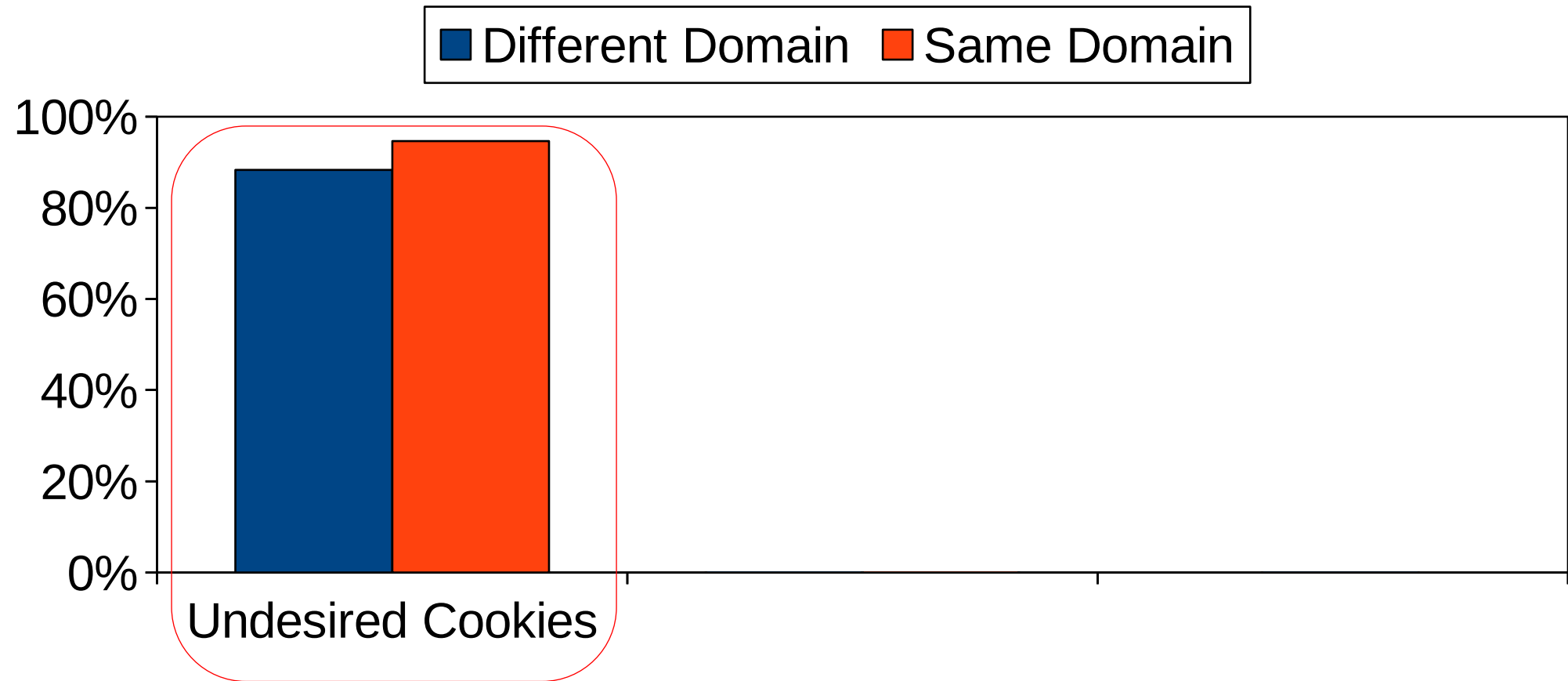
User Tracking



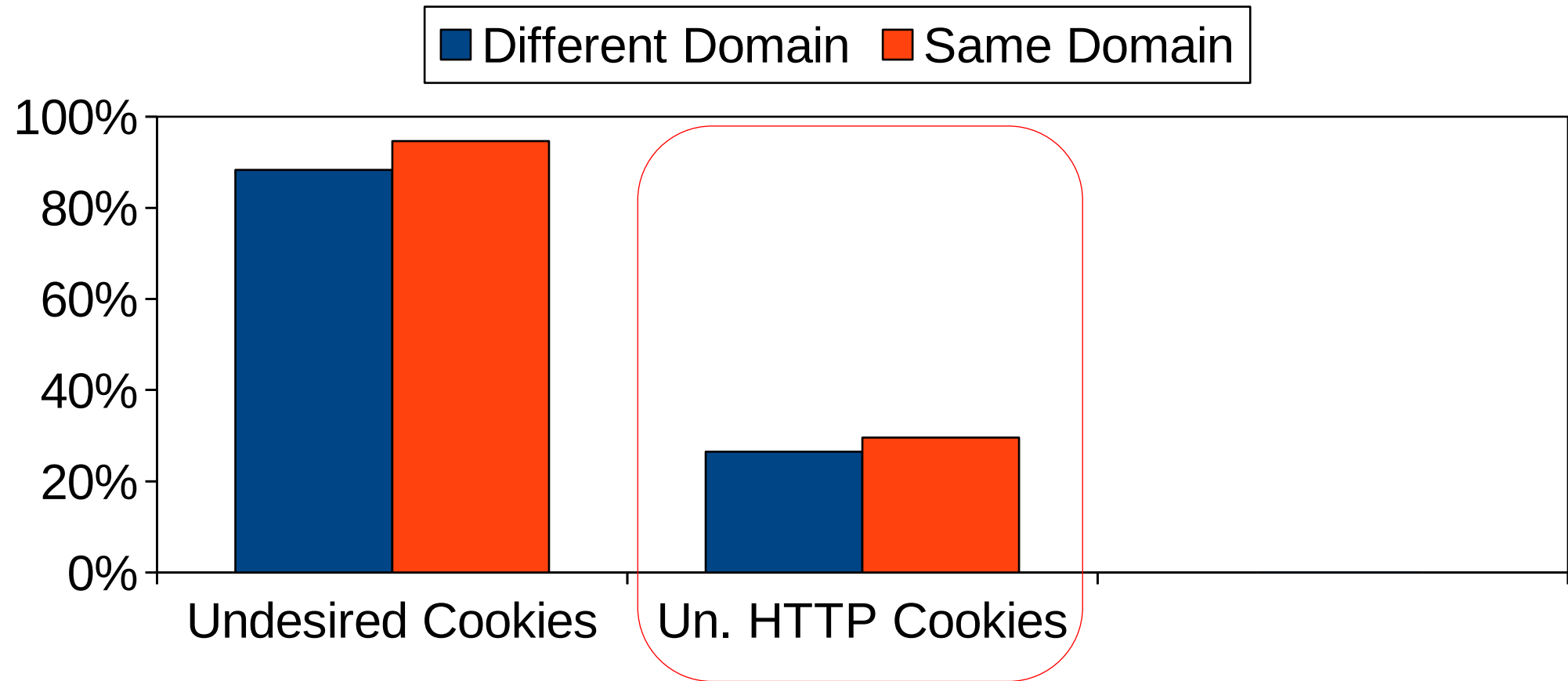
User Tracking



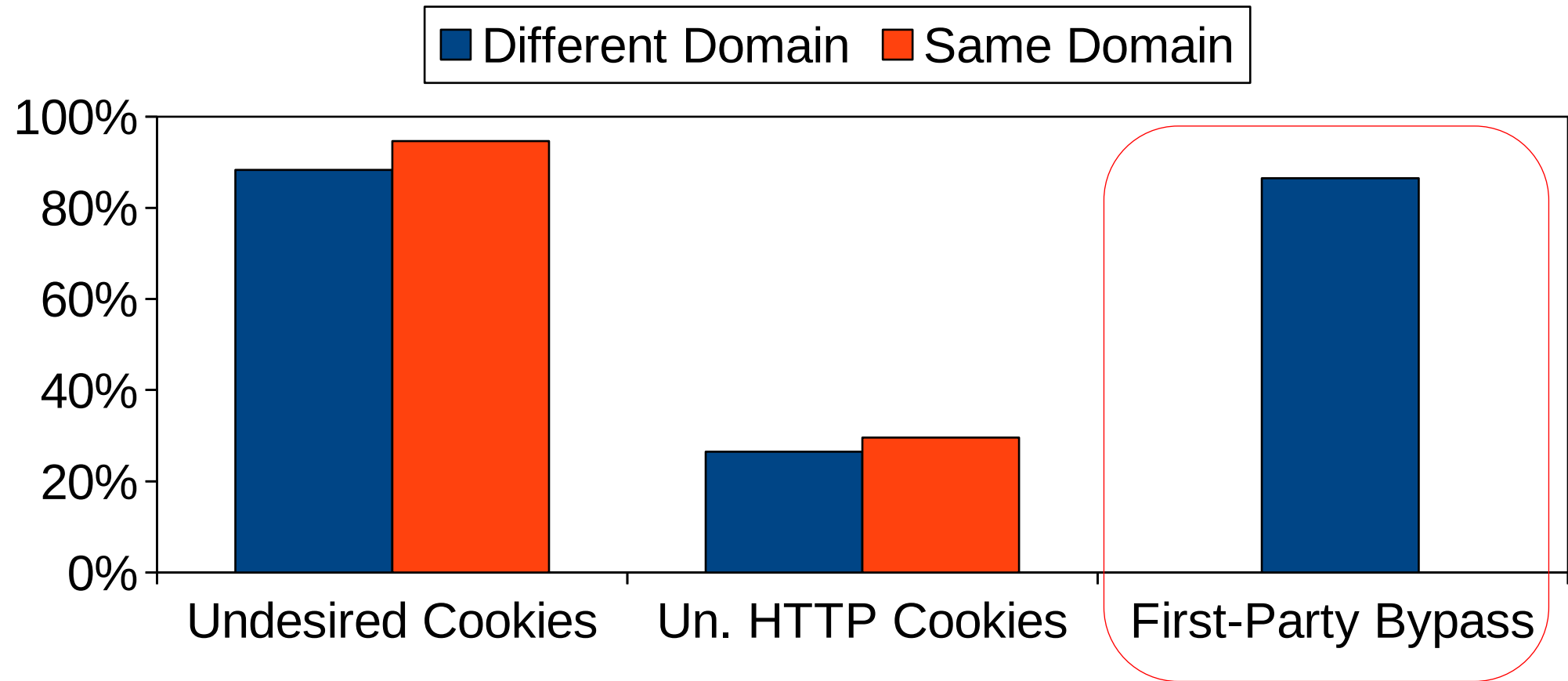
User Tracking



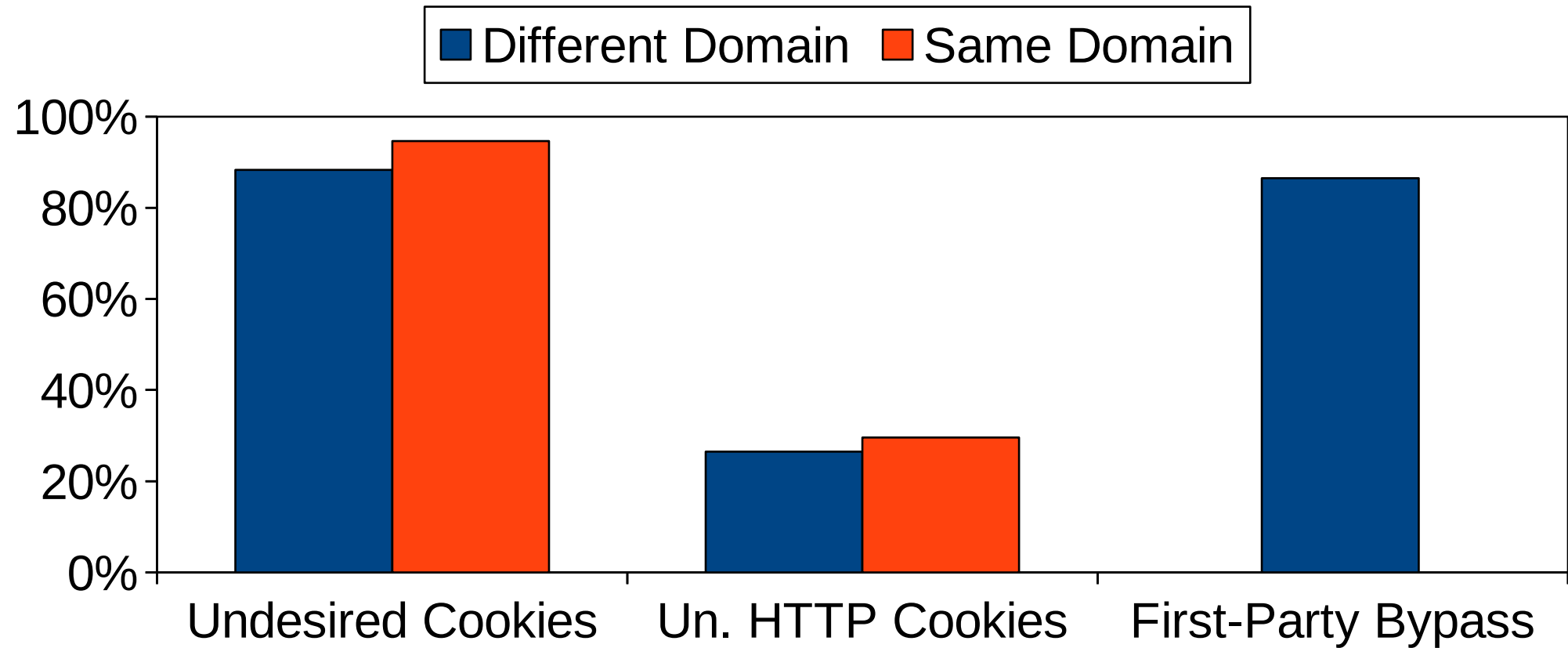
User Tracking



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!

Iskander.Sanchez@NortonLifeLock.com

[Iskander-Sanchez-Rola.com](https://iskander-sanchez-rola.com)

