Tie-RBAC
An application of RBAC to Social Networks

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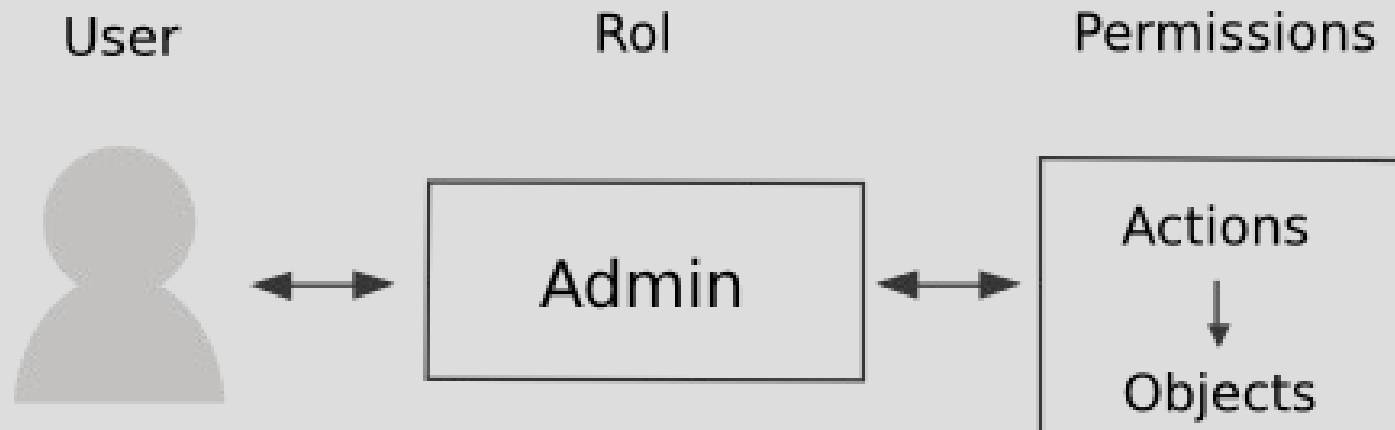ETS de Ingenieros de Telecomunicación

Universidad Politécnica de Madrid

Access control models

- Discretionary Access Control

- Mandatory Access Control

- Role-based access Control

- Other (Task/workflows, etc)

Joshi J, Aref W, Ghafoor A, Spafford E. Security models for web-based applications. Commun. ACM, 44, 2, Feb. 38–44. 2001

RBAC

User   Rol   Permissions

Admin

Actions

↓

Objects

RBAC advantages

- Policy neutral

- Simplified security administration

- Administrative roles to manage other roles

- Separation of duties

- Least privilege

Joshi J, Aref W, Ghafoor A, Spafford E. Security models for web-based applications. Commun. ACM, 44, 2, Feb. 38–44. 2001

Social Network Analysis

- Understanding the linkages between social entities

Wasserman S, Faust K. Social network analysis: methods and applications. New York: Cambridge University Press. 1997.

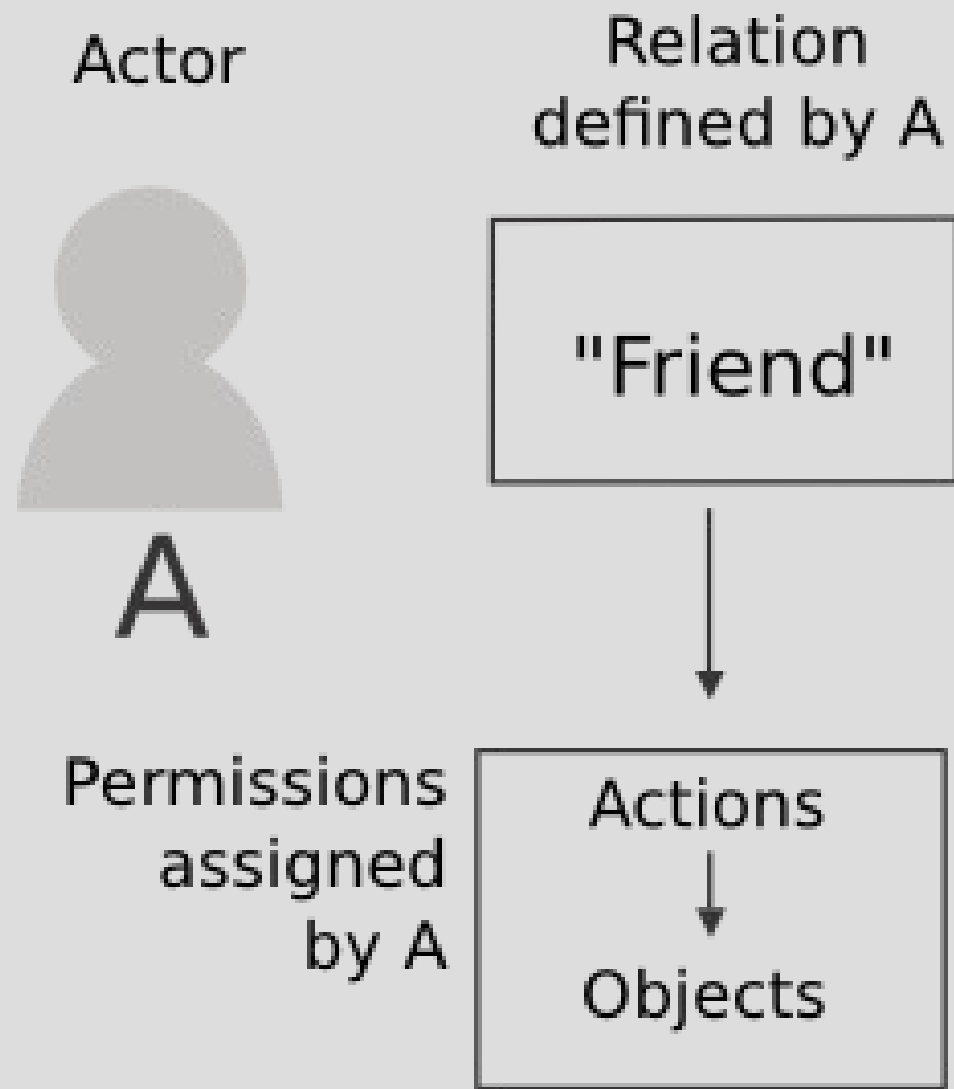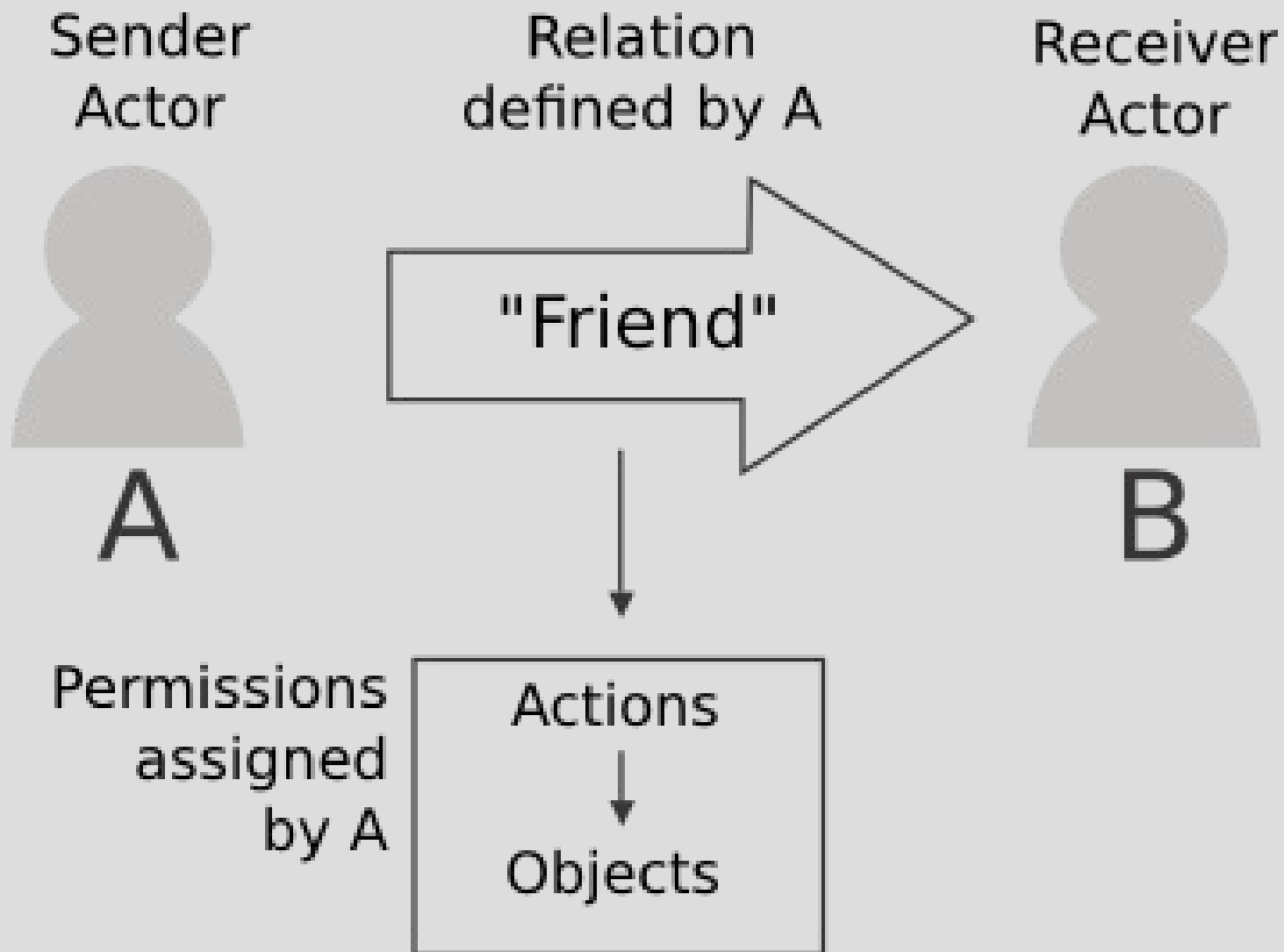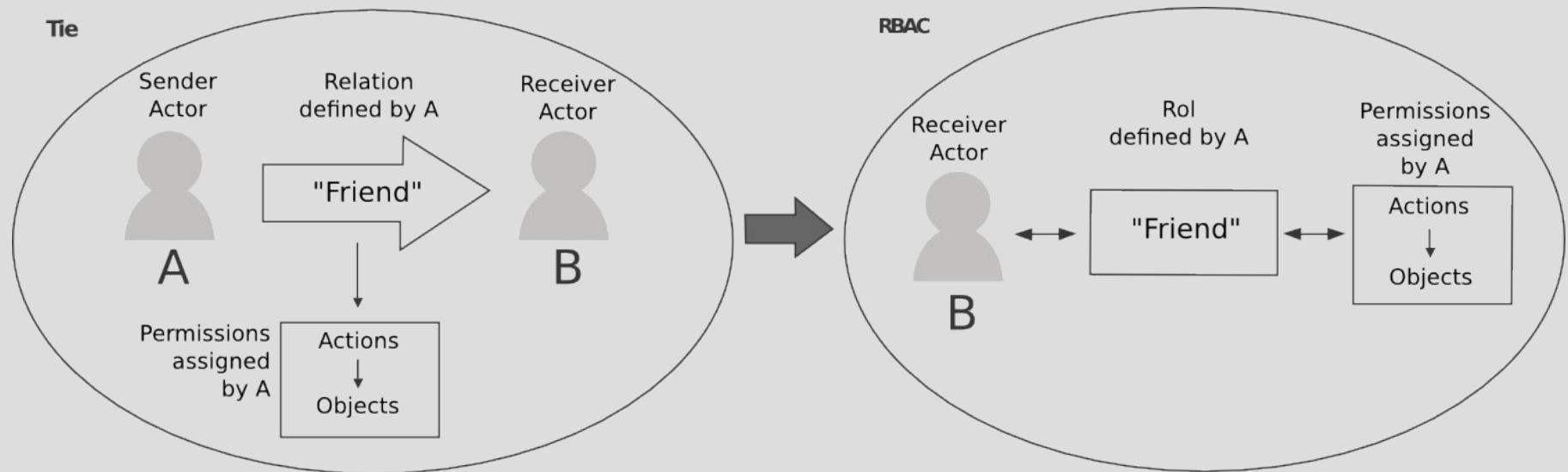# Tie

Sender Actor	Relation	Receiver Actor

Sender Actor

Relation

Receiver Actor

A

"Friend"

B

Tie-RBAC

Actor

Relation
defined by A

A

"Friend"

Permissions
assigned
by A

Actions

Objects

Tie-RBAC

Tie

Sender Actor — A

Relation defined by A
"Friend" →

Receiver Actor — B

Permissions assigned by A →
Actions ↓ Objects

RBAC

Receiver Actor — B

Rol defined by A
↔ "Friend" ↔

Permissions assigned by A
Actions ↓ Objects

Advantages from RBAC

- Policy neutral

- Simplified security administration
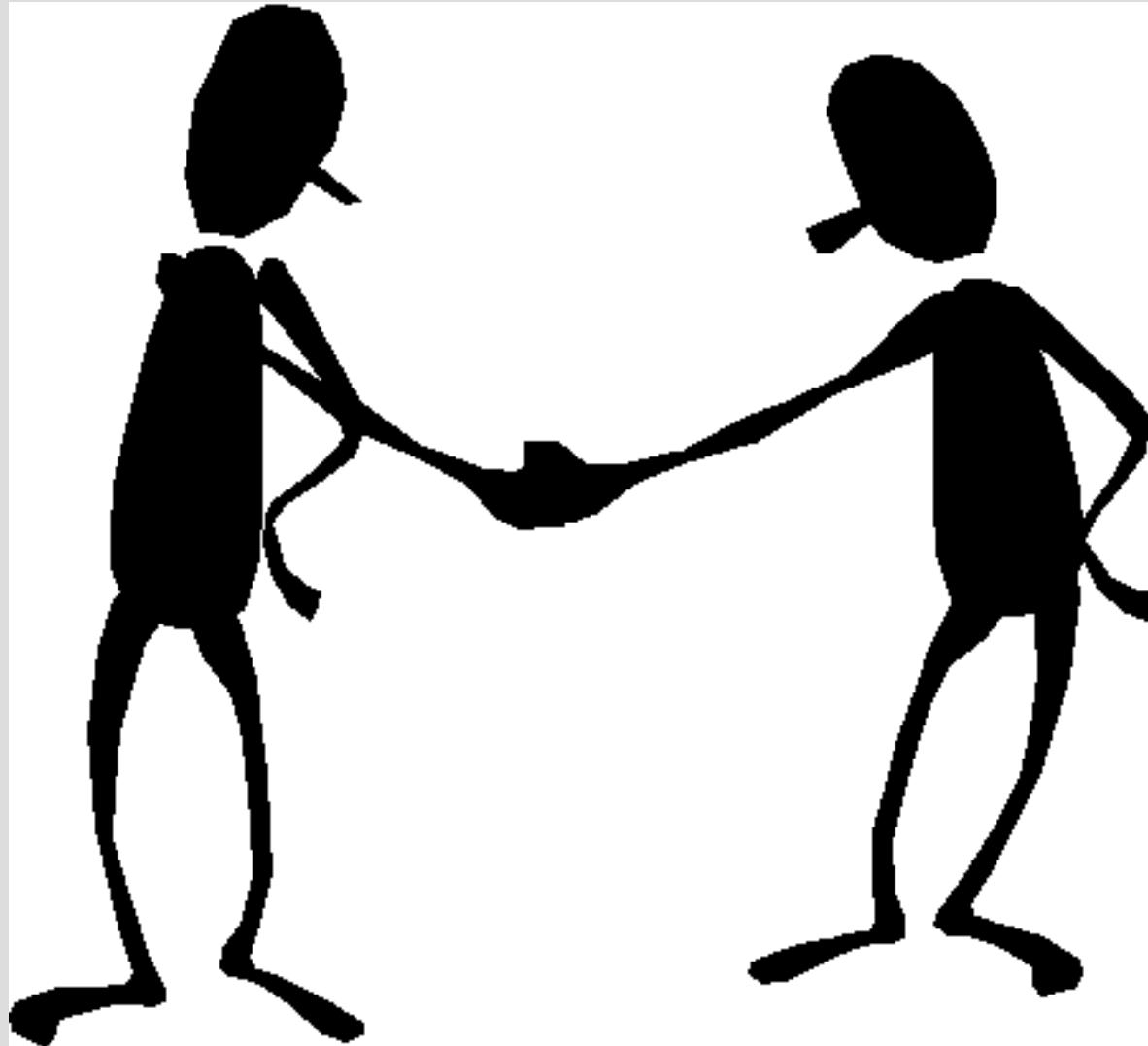
- Administrative roles to manage other roles

Tie-RBAC advantages

- Relations are similar to roles

- Managing security while building the network

Implementation: Social Stream

- Core for building social network websites

- Ruby on Rails plug-in

- User, groups, post and comments

- Free / open source

- http://social-stream.dit.upm.es/

Looking for scholar visit!

Questions?

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