UNIVERSITY OF TRENTO - Italy

eit Digital MASTER SCHOOL

Security Engineering
Fall 2015

Lecture 03bis – Understanding Risks

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An exercise in Security

- *Mother, Father and Child*
  – You are a mother
  – Your asset is your child
  – You can use the father to provide some services
  – You have to balance security and cost
- *Only one thing is possible for you*
  – Bring the child to school
  – Collect the child from school
- *What is safer for a child?*
  – Go back home from school alone?
  – Go back with the father?

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Understanding Risk

- *Outcome of exercise was that almost all students but one considered the going alone the most dangerous thing*
- *It is very difficult to understand exactly risk*
- *Understanding quantitative risk is even harder*
  – Prevalence Rate:
    • people with a problem vs total population
  – Incidence Rate
    • New people with problem vs total population at beginning of observation period
  – Relative Risk Ratio (comparing two characteristics):
    • people with a problem AND some characteristics vs total population with the same characteristics
  – Odds Ratio (comparing two characteristics):
    • SAMPLE of people with a problem AND some characteristics vs SAMPLE of total population with the same characteristics

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Estimating Risk

- Mother-Father-Child: problems at school
  – Bullies
  – Drug trafficking at school
  – Women repeated abusers ("Choose better father")
- The rest …
  – Drug trafficking
  – Counterfeiting arrests
  – Homicides
  – Hooligans
  – Human trafficking (immigrants)
  – Mafia related arrests
  – Robberies
  – Terrorism
  – Violent Protesters

Estimating Risk – Threat Agents

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- **Mother-Father-Child: problems at school**
  - Bullies ("Choose better school") — 3.061 — 2.2%
  - Drug trafficking at school — 92 — 0.1%
  - Women repeated abusers ("Choose better father") — 2.176 — 1.6%
- **The rest …**
  - Drug trafficking — 32.163 — 23.2%
  - Counterfeiting arrests — 52.156 — 37.7%
  - Homicides — 406 — 0.3%
  - Hooligans — 4.793 — 3.5%
  - Human trafficking (immigrants) — 728 — 0.5%
  - Mafia related arrests — 1.687 — 1.2%
  - Robberies — 34.852 — 25.2%
  - Terrorism — 50 — 0.0%
  - Violent Protesters — 6.220 — 4.5%
- **TOTAL CRIMINALS** — **138.384** — **100%**
- **TOTAL ITALIANS (15-60)** — **35.704.907**
- **What does it concretely mean?**
  - If we transform this into our class or our University building as a population?

Estimating Risk – Threat Victims

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- **Mother-Father-Child: problems at school**
  - Death by car accidents ("driving lessons")
  - Wounded by car accidents ("ibid.")
  - Bullies ("Choose better school")
  - Women victimization ("better father")
- **The rest …**
  - Drug addicts in care
  - Gambing Addicts
  - Homicides
  - Robberies
  - Thefts (Victims)
- **TOTAL VICTIMS**
- **TOTAL ITALIANS (15-60)** — **35.704.907**
- **What does it concretely mean?**
  - If we transform this into our class or our University building as a population?

Estimating Risk – Threat Victims

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- **Mother-Father-Child: problems at school**
  - Death by car accidents ("driving lessons") — 1.639 — 0,1%
  - Wounded by car accidents ("ibid.") — 49.132 — 2,6%
  - Bullies ("Choose better school") — 3.061 — 2.2%
  - Women victimization ("better father") — 207.784 — 11,1%
- **The rest …**
  - Drug addicts in care — 164.993 — 8,8%
  - Gambing Addicts — 6.804 — 0,4%
  - Homicides — 406 — 0,0%
  - Robberies — 34.852 — 1,9%
  - Thefts (Victims) — 1.407.268 — 75,0%
- **TOTAL VICTIMS** — **1.875.939** — **100%**
- **TOTAL ITALIANS (15-60)** — **35.704.907**
- **What does it concretely mean?**
  - If we transform this into our class or our University building as a population?

Estimating Risk – Threat Victims II

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- **Mother-Father-Child: problems at school**
  - Death by car accidents ("driving lessons") — 1.639 — 0.6% — ~~0,1%~~
  - Wounded by car accidents ("ibid.") — 49.132 — 18.8% — ~~2,6%~~
  - Bullies ("Choose better school") — 3.061 — 1.2% — ~~2.2%~~
  - Women victimization ("better father") — 207.784 — 79.4% — ~~11.1%~~
- **TOTAL CASES OF CONCERN** — **261.616** — **100%**
- The rest …
  - Drug addicts in care — 164.993 — 8,8%
  - Gambing Addicts — 6.804 — 0,4%
  - Homicides — 406 — 0,0%
  - Robberies — 34.852 — 1,9%
  - Thefts (Victims) — 1.407.268 75,0%
- TOTAL VICTIMS — 1.875.939 — 100%
- TOTAL ITALIANS (15-60) — 35.704.907
- **What does it concretely mean?**

Estimating Risk – Threat Victims II

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- *The "find a better partner" problem*
  - Beating
  - Domestic abuse
  - Severe injuries
  - Sexual assault
  - Stalking
  - Threatened
- *TOTAL VICTIMS* **207.784** *100%*
- *TOTAL ITALIAN W (15-60)* **17.954.696**
- *What does it concretely mean?*
  - If we transform this into our class or our University building as a population?

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Estimating Risk – Threat Victims II

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- *The "find a better father" problem*
  - Beating   16.319 7,9%
  - Domestic abuse   13.774 6,6%
  - Severe injuries   70.284 33,8%
  - Sexual assault   4.471 2,2%
  - Stalking   12.492 6,0%
  - Threatened   90.444 43,5%
- *TOTAL VICTIMS* **207.784** *100%*
- *TOTAL ITALIANS (15-60)* **17.954.696**
- *What does it concretely mean?*
  - If we transform this into our class or our University building as a population?

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Estimating Risk – M-F-C

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- *The original problem:*
  - Total cases from 1974 to 2014 in Italy
  - Estimated cases of disappearence for Italian minors
  - Proportionally from known Italian cases (1.186)
    - 32% no cause recorded < 2007
    - Foreign minors data is unrealiable as they give fake names
- *What happened to Italian disappeared minors?*
  - Run away from shelter
  - Run away from home
  - Kidnapped by relative
  - Victims of crime
  - Lost (psychological problems)
- *TOTAL DISAPPEARED*
- *TOTAL MINORS in 2014 (4-17)* **17.954.696**
- *What does it concretely mean?*
  - If we transform this into our class or our University building as a population?

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Estimating Risk – M-F-C

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- *The original problem:*
  - Total cases from 1974 to 2014 in Italy
  - Estimated cases of disappearence for Italian minors
  - Proportionally from known Italian cases (1.186)
    - 32% no cause recorded < 2007
    - Foreign minors data is unrealiable as they give fake names
- *What happened to Italian disappeared minors?*
  - Run away from shelter   671   38,1%
  - Run away from home   578   32,8%
  - Kidnapped by relative   490   27,8%
  - Victims of crime   21   1,2%
  - Lost (psychological problems)   1   0,1%
- *TOTAL DISAPPEARED* *1.761* *100%*
- *TOTAL MINORS in 2014 (4-17)* **17.954.696**
- *What does it concretely mean?*
  - If we transform this into our class or our University building as a population?

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Suggested Exercise

- *Principles of Epidemiology*
  - http://health.mo.gov/training/epi/index.html