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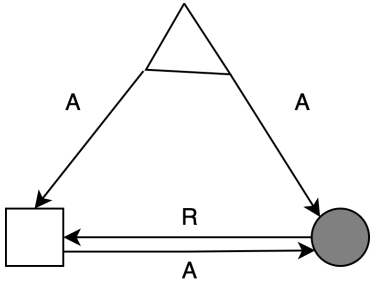

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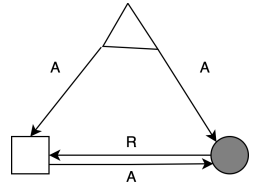

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Formal **&abstract** Assumptions regarding Messages!

A1. Every Message that is sent is delivered correctly.
A2. There receiver of a message knows who sent it.
A3. The absence of a message can be detected.
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A4. (a) A loyal general's signature cannot be forged (**or changed!!**) and any alteration of the contents of his signed messages can be detected
(b) Anyone can verify the authenticity of a general's signature

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Formal statement of Signed messages $SM(m)$

Initially $V_i = \emptyset$
(1) The commander signs and sends message $v : 0$ to all lieutenants
(2) For each i:
(A) If Lieutenant i receives a message of the form $v : 0$ from the commander and he hasn't receieved any order, then:
(i) he lets $V_i = v$
(ii) he sends the message $v : 0 : i$ to every other lieutenant.

(B) If Lieutenant i receives a message of the form $v : 0 : j_1 \cdots : j_k$ **and** $v \notin V_i$ then:
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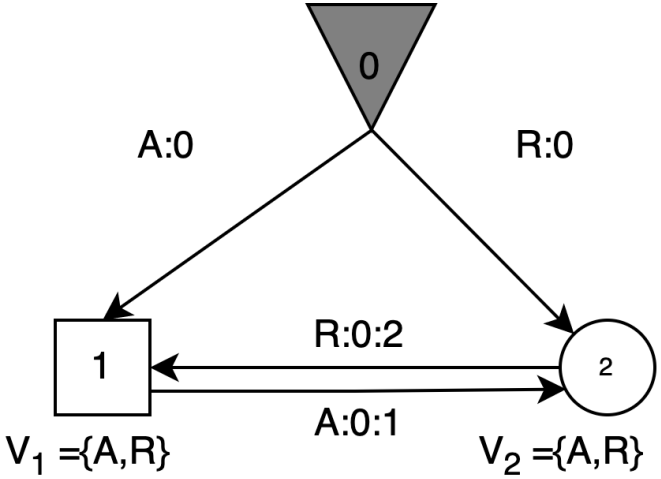
The impossible case revisited



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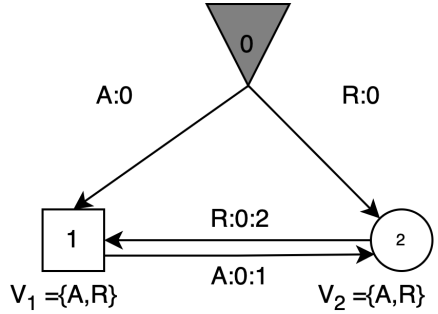

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