The paper analyses the effects of Selfish routing (source & overlay) on an intra-domain network. Theoretical worst cases have shown that Selfish routing could result in suboptimal system behavior with serious performance degradation arising out of lack of cooperation between the sources. This paper tries to quantify the extent of sub-optimality (if it exists?) in an Internet like environment.

The following observations helps understand what needs to be measured and compared

- Internet has a definite structure to its Traffic demands and topologies - the theoretical worst cases might not be applicable in these scenarios
- Overlay routing doesn't give full flexibility - the physical network decides the route between overlay nodes.
- Horizontal Interactions - overlay traffic (foreground) and the regular (background) traffic interact and would impact each others performance
- Vertical Interactions - Selfish routing interactions with Traffic engineering. Mismatch of policies often result in severe performance degradation.

They go on to compare selfish source routing, selfish overlay routing with optimal and compliant routing and in this process find out that selfish routing doesn't necessarily result in suboptimal system performance. They go on to observe that selfish routing results in congestion on certain links.

Pros

- Clearly shows the practical applicability of selfish routing, by demonstrating how it need not result in a pathological situation in an environment like the Internet.
- Overlay's performance numbers were shown using 3 underlying physical routing schemes.
- Overlays that spanned few nodes as well as the entire network were considered.
- In depth analysis into Link Latency - which is the metric that directly affects the end user.

Cons

- Latency is the only optimization metric evaluated for selfish routing. Other metrics could also have given an interesting perspective into this form of routing.
- They have run the measurements on several different networks, supposedly with different topologies - but dont go into what these differences were (excepting ABOVENET, which has a mesh topology) and how the overlay on top would be impacted by the topology.
- Size of data set - traffic matrices were taken from backbone routers at 3 randomly chosen hours in Nov 2002. A larger data set would make a more convincing case.