Property Rights

Kolstad - Chapter 6
"The Polluter and the Victim": Who should have rights?
It makes any difference who has the right to pollute?
What is the correct amount of pollution?
Assume:

1. Steel mill produces steel, $S$, and Pollution emissions at a cost $C_s(S)$
2. Laundry produces clean clothes, $L$, at a cost $C_L(L, S)$ and $C_L^s(\cdot) > 0$
3. $P_s$ price of steel and $P_L$ price of laundry (they are fixed)
4. Benchmark Case: How much to produce if we could internalize the externality? Simple way is to merge these firms!

$$\pi_m(S, L) = P_s S + P_L L - C_s(S) - C_L(L, S)$$
\[
\max_{S,L} \pi_m (S, L)
\]
• Assume a world in which some producers or consumers are subject to externalities generated by other producers or consumers. Further, assume:

• Everyone has perfect information

• Consumers and producers are price takers

• There is a costless court system for enforcing agreements

• Producers maximize profits and consumers max. utility

• There are no income or wealth effects

• There are NO transaction costs

• In this case initial assignment of PR regarding the externalities does not matter for efficiency. If any of these conditions does not hold, the initial assignment does matter!
What is the relevance of the Core to the Coase Theorem?

Failure is an empty core. Status quo prevails!

Example:

Suppose 3 firms: Laundry (L), Steel mill (S) and Railroad (R)

Possible cooperative arrangements:

\[
\begin{align*}
A_1 &= \{R,S,L\} & A_2 &= \{R,(S,L)\} & A_3 &= \{(R,S),L\} \\
A_4 &= \{(R,L),S\} & A_4 &= \{(R,L,S)\}
\end{align*}
\]

<table>
<thead>
<tr>
<th>Partition</th>
<th>Payoff</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>$A_1$</td>
<td>${3,8,24}$</td>
<td>Each firm act as independently</td>
</tr>
<tr>
<td>$A_2$</td>
<td>${3,36}$</td>
<td>Steel mill and laundry merge</td>
</tr>
<tr>
<td>$A_3$</td>
<td>${15,24}$</td>
<td>rail road and steel mill merge</td>
</tr>
<tr>
<td>$A_4$</td>
<td>${31,8}$</td>
<td>rail road and laundry merge</td>
</tr>
<tr>
<td>$A_5$</td>
<td>${40}$</td>
<td>All three merge</td>
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