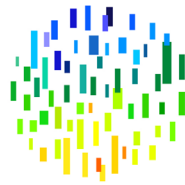


Research Brief #2: Sharing Responsibility, Sharing Credit



shine

Sustainability and Health
Initiative for NetPositive Enterprise

*Every actor who co-causes a footprint shares responsibility for the same impact.
In the same way, every actor who co-causes a handprint shares credit.*

Co-Causation and Shared Responsibility in Footprinting

A **footprint** is a metric used to represent an amount of environmental or social impact. An actor who directly causes an impact, such as a person who chooses to drive a vehicle to the store, bears responsibility for these impacts in footprint accounting, or footprinting. The pollution from driving the vehicle to the store becomes part of the person's footprint.

This example involves *direct and linear* causation of the pollution impacts. The causal model used to describe cause and effect in this case is called "simple linear causation." The rules of simple linear causation include:

- There is a direct link between cause and effect.
- The effect can be traced back to one cause.¹

**All actors in a chain
share responsibility
for the footprints
that they co-cause.**

There are many other forms of causation, several of them relevant for footprints and handprints. Consider for example cascading causation, or "domino causation," where an effect becomes a cause of further effects. With cascading causation:

- Effects become causes
- A cause has direct and indirect effects
- There can be branching of causation, with a cause having more than one effect
- Branch effects can be traced back to a stem cause.

Cascading causation is highly relevant in footprints. The trip to the store directly caused gasoline combustion and related pollution. But burning gas also required producing it, and production of the gasoline caused other pollution, and required energy inputs which caused still more pollution. The trip to the store has a supply chain, with branches, and each impact on each branch is part of the footprint of the trip to the store.

Interestingly, these same impacts are also part of the footprint of the actors farther up the chain; for example, they are part of the footprint of the gas station and of the fuel refinery and the energy provider to the refinery. In the footprint framework, **all of the actors in the chain share responsibility for the impacts that they co-cause**, whether they cause the impacts directly or indirectly, and no matter how many other actors also share responsibility for these same impacts. When you are part of an action chain, you share responsibility for its impacts.

¹ *Learning Causality in a Complex World: Understandings of Consequence*. Tina Grotzer 2012. Rowman and Littlefield.

How much of the impact did you cause?

Sometimes we cause an identifiable part of some larger impact. In these cases, just the part we caused is included in our footprint. In the driving example, the consumption of gasoline indirectly caused some of the pollution at the petroleum refinery where crude oil is processed into gasoline. A fraction of the refinery's pollution is assigned to its production of each gallon of gas that it produces, and the quantity of gas required for our trip determines our footprint's share of the refinery's pollution. This kind of proportioning is used across the supply chain in calculating footprints, whenever we can logically and practically use available data to quantify the fraction of a larger impact that an actor has caused.

Co-Causation and Shared Credit in Handprinting

Now let's consider your handprint, the positive change that you cause relative to BAU. Sometimes you directly and singly cause the change, like you directly caused your tailpipe emissions. But as with footprint causation, we can also find complex causation in handprints. What if you offer your friend a lift to the store, removing her need to drive, and she accepts. Then you reduced her footprint by offering, and she reduced her footprint by accepting. This is a case of direct, joint causation. You and your friend both jointly cause her footprint reduction.

Cascading causation involving conscious choices by actors along the chain is another form of joint causation. Let's say that your friend, inspired by your kindness, offers her friend a lift the next time she goes to the store. Without your act, she wouldn't have done it, so one of the causes of her new action is your original action. Your act has a "ripple effect" in this example, just like your purchase of gasoline had ripple effects up its supply chain. And just like the supply chain example, you and your friend share credit for the impacts that you jointly cause. They are positive impact changes (handprints) rather than negative impacts of consumption (footprints).

How we Avoid Double-Counting, in Footprinting and Handprinting

Not often, but sometimes, we calculate the footprint of a group of actors: the total footprint that they jointly or collectively cause. Let's say we are estimating the collective footprint of a group of companies in an industry. If some of these companies supply goods or services to others in the group, then their footprints overlap somewhat – they include some co-caused impacts. When calculating their joint footprint we count the impacts in these overlaps only once, to avoid double counting, in estimating the total footprint that they jointly cause.

We use the exact same logic and approach when estimating the total handprint of a group of actors. We count the co-caused or overlapping handprints only once, to avoid double counting.

It's possible for a group of actors who collaborate a lot on handprint creation but don't overlap in their footprints (they are not in each other's' value chains, for example) to be individually Net Positive but not collectively so. Each actor's handprint is larger than their own footprint, but the group's handprint is smaller than the group's footprint. Individual accounting first encourages collaboration. Then joint accounting encourages working towards the net positivity of our groups of collaborators, which encourages wider collaboration, and efforts toward wider and wider net positivity, until humanity as a whole has become net positive.