

# Science

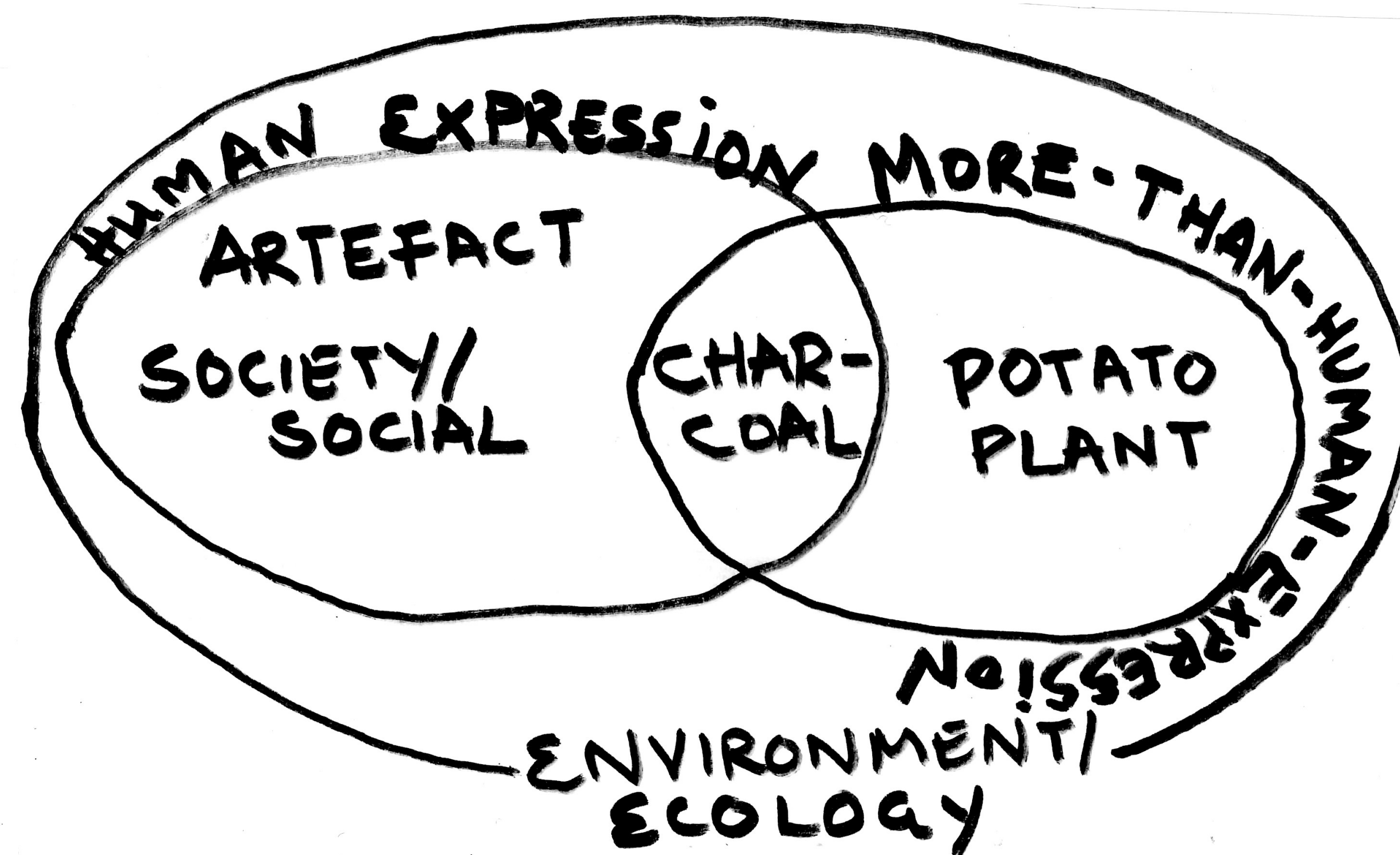
**Co-created potato crop trials of biochar in community garden settings.** Treating soil with biochar is a way of adding carbon. It may also increase crop yields. In 2024, there were ten crop trials in community garden settings at **Oxford & Dartington (UK)**. Each trial comprised an intervention plot, enriched with biochar (charcoal from wood) and planted with potatoes (*Solanum tuberosum*), and a matching control plot, planted with the same number and variety of potatoes without biochar. These co-created trials allowed for differing cultivation practices and growing conditions. In Oxford there were 6 participants and 10 crop trials at an allotment site. At Dartington, there was a trial in a student garden. A total of 300 potatoes were planted in all the trials. One trial failed as no data was returned. Absolute weights of potatoes harvested from individual plots ranged from 0.7 to 21.0 kg. The primary outcome was the comparison of the log-transformed weights of potatoes harvested in the intervention compared to the control plots using a paired t-test. The difference (intervention – control) was 1.26 ( $P=0.09$ , 95% confidence interval 0.95 to 1.66), representing a point estimate of a 26% increased yield in the intervention group, but consistent with a 5% decrease to a 66% increase. **It would require about 160 plots, rather than 10, in each group to give 80% power to detect a 25% increase in yield.**

Andrew Wood/ Karl Wallendszus

# Integrate Your Practice

***Charcoal — also known as wood biochar — is both a plant fertilizer and a medium for drawing.***

In 2024, charcoal was used in two separate science and art research projects. One planted **potatoes with charcoal in crop trials**; the other created **abstract charcoal drawings**. The different research practices were then **integrated** at a potato planting, and a harvesting event. Finally, the art and science was conceptualised together in an **ontology** for ‘expression’ - see below. Thus allowing for plant expression and human expression too!



Note: A science paper and a charcoal drawing are both artefacts. Would you arrange this ontology differently?



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# Art

**We co-created drawing performances called ‘residuals’.**

Charcoal, earth, water, potatoes, hands, feet, bodies, tools, light and paper were used.

## Residuals #1 to #10 Art Practice



## Residuals #4 and #7 Integrated Research Practice



Drawing while also planting or harvesting potatoes from the crop trials with charcoal.



