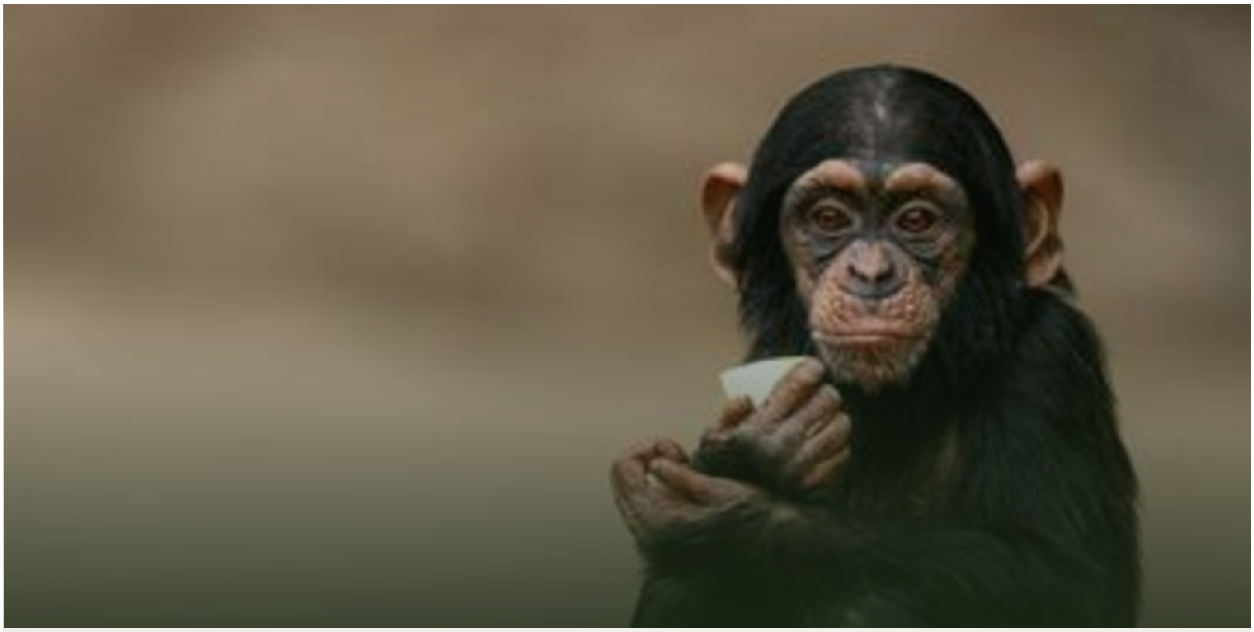

INTELLIGENSICUS

The Primate Augmentation Track

Detachable Robotic Appendages, and the Cognition That Survives Release

RESEARCH PROGRAM PROPOSAL

Imran Stanton Cooper

MARINE CEPHALOPOD INSECT CORVID CETACEAN APE ELEPHANT BEAR DOMESTIC

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01 INTRODUCTION

This track asks a narrower question than the rest of the program, and the catch-and-release outpost is what makes the question answerable. A wild monkey comes into the outpost of its own accord, as it does on every other track. Inside, it is fitted with non-invasive headgear that lets it drive a robotic appendage. The appendage is real and it does useful work. The animal uses it for its own purposes for a short while. Then the session ends, the gear comes off, and the animal goes back out into its own range without it.

The appendage never leaves the outpost. That is the design, not a limitation of it.

What the program measures is what the animal carries out through the door. If problem-solving is higher on later voluntary returns, and higher in the wild where the hardware cannot follow, then supplied capability transferred into the animal and stayed there. If capability collapses the moment the arm is off, the augmentation was a prosthesis rather than an uplift, and this track reports that plainly instead of publishing the assisted score.

That distinction is the founding discipline of Intelligensicus applied to hardware. The program scaffolds self-authored capability and refuses to hand animals finished solutions. A robotic arm is, on its face, a finished solution. Release is what resolves it. The appendage is not the deliverable. The deliverable is whatever gain persists once the animal is back in the trees, and the experiment is built so that a gift cannot be mistaken for a gain.

The species question is open and is treated as a screening problem rather than a preference. Small monkeys are the likely answer. Capuchins are the strongest single candidate because they already use stone tools in the wild, carry an unusually high manipulative drive, and live at densities and in ranges where an outpost can be sited in their own forest. Other small New World and Old World monkeys are screened against the same criteria in Year 1. Great apes are excluded from the augmentation work by design. They carry a near-person permit burden and a near-person ethical standard, and the question here does not require them.

02 RESEARCH QUESTIONS

1. Does a wild monkey that has driven a detachable robotic appendage inside the outpost solve unrelated problems better afterward, outside it, than it did before it was ever fitted?
2. Does the appendage get incorporated into the animal's body schema during a session, and does that incorporation help or hinder what persists after release?
3. Does short, infrequent, irregular exposure produce more durable transfer than long or scheduled exposure?

4. When no task is set, what does the animal choose to do with the appendage?

03 AIMS AND OBJECTIVES

To determine whether externally supplied physical capability produces cognitive gain that outlives the supply; to establish a burst-and-release protocol that avoids consolidating a body schema around a limb the animal will not keep; and to develop a non-invasive interface standard the other tracks can borrow.

04 METHOD AND DATA COLLECTION

The outpost is a clear enclosure sited in occupied capuchin range, built to the standing outpost rule that it leaves the habitat richer than it found it. Entry is voluntary and unforced on every visit. An animal that does not come in is not a dropout, it is data about the draw, and no animal is held.

Non-invasive headgear only. This is a hard constraint and it costs the program bandwidth. The existing primate interface literature is largely invasive, using implanted cortical arrays, and it is excluded here on welfare grounds even though it would decode better. Surface electrophysiology with gaze and gesture decoding is what this track is allowed to use, and the appendage is designed down to that lower control bandwidth rather than the interface being escalated up to the appendage.

The task is built around something capuchins already do. They already position, strike, and lever objects to get at food that is otherwise out of reach. The appendage extends that existing behaviour rather than introducing a foreign one, which is the same scaffolding rule the octopus and corvid tracks run on.

Reward is matched to what the animal actually wants, which on this track is usually a food it values and cannot easily get in season, and sometimes simply the manipulation itself. Capuchins work objects without payment, and the open condition below exists because of it.

Sessions are short, infrequent, and deliberately irregular in length and spacing. This is not a convenience schedule. It follows from what the augmentation literature reports about body-representation change, and the catch-and-release cycle enforces it structurally: the animal spends nearly all of its life outside the outpost, in its own range, being an ordinary monkey, with the appendage nowhere in reach.

Two conditions are scored separately. In the set condition the animal works a defined problem. In the open condition the appendage is simply available and no task is set, and the record is of what the animal chooses to do with it. The open condition is the more informative of the two and is the one the program expects reviewers to underweight.

Cognitive measurement is taken at three points: before the animal has ever worn the gear, during the augmented session, and after release. The post-release measurement is the one that matters. It is drawn from unassisted tasks the appendage cannot help with, taken on later voluntary returns and from observation of the animal in the wild, so that a residual gain cannot be an artifact of practice with the hardware.

05 DATA ANALYSIS

The primary comparison is post-release performance against naive baseline on unassisted problems. Assisted performance is recorded but is not the finding. Body-schema incorporation is tracked through reaching, tool-directed attention, and behaviour toward the space the appendage occupied once it is off. Transmission is watched on the program's standard success metric, which is whether a behaviour spreads through the group and persists across generations, and the outpost sees that directly because the animals it releases go back to an intact wild troop.

The program states in advance the result that would falsify it. No reliable post-release gain over naive baseline means externally supplied capability did not transfer, and that is a publishable answer rather than a failure to be rescued by reframing.

06 OPPORTUNITY

The augmentation literature has run almost entirely in humans, who can be instructed and who report what they feel, and in invasively instrumented monkeys, who are studied for control accuracy rather than for what the experience leaves behind. Nobody has asked what a wild animal keeps after the hardware is removed and it walks away. The apparatus is comparatively cheap, the cohort is small, and the outpost is the same unit the rest of the program already builds.

07 ETHICAL ISSUES

Welfare-first, non-invasive, voluntary entry, no implants, no removal from the wild, no animal held. The animal leaves under its own power at the end of every session, which is the ordinary catch-and-release condition and not a special provision for this track.

The specific hazard here, and the reason the burst schedule exists, is distress on removal. Human augmentation studies report that an added effector can be taken into the body representation, and the concern that follows is a phantom-limb style disturbance when it is

withdrawn from an animal that cannot be told the arm is leaving and cannot be prepared for it. The program treats that as the central welfare question of the track rather than a footnote. Removal is graded rather than abrupt, sessions are kept short and irregular so that incorporation stays shallow, and the release itself is the strongest protection available, because the animal returns immediately to a full life in which the appendage plays no part. Observable distress at removal, or altered behaviour on the outside afterward, is a stopping condition for that individual and not a data point to be worked around. If the protocol cannot be run without producing it, the track does not proceed, and the program reports the reason.

There is a second and less comfortable point. The animal did not consent and cannot. The program does not pretend otherwise. What it offers instead is an explicit trade-off, stated in the same terms the rest of the program uses. The intervention is non-invasive and reversible, entry is voluntary, the animal keeps whatever it gains, and non-intervention is itself a choice with a record rather than a neutral default.

08 PERMITTING

Lighter than the great-ape and marine-mammal tracks, heavier than the corvid and domestic tracks. Wild work requires the host nation's wildlife-research and protected-area permits, and siting an outpost in occupied range requires landholder and community consent on the same terms the other field tracks state. Institutional animal-care review applies under the 3Rs (Russell and Burch, 1959). Non-human primate handling standards govern the session itself. Because no implant is used, no animal is taken from the wild, and no animal is held, the surgical, capture, and captive-holding pathways that dominate the permit burden in comparable primate work are absent. Species listing determines whether trade and endangered-species clearances apply, which is a further argument for the common small monkeys over the great apes.

09 COST STRUCTURE

The augmentation outpost is a land enclosure unit with an instrumentation load, not a vessel and not a bare field camp. The dominant lines are the sited enclosure and its habitat-enrichment obligation, the interface and appendage hardware with a spares and iteration budget, behavioural and video instrumentation, the resident cohort running sessions and scoring the batteries, and the range-state permitting and community-consent overhead. There is no ship time. A fully loaded augmentation outpost-year is modeled at an order-of-magnitude $400,000 to $850,000 per outpost per year in the early production run, close to the great-ape field track because the field siting and consent burden is comparable, with the hardware line replacing the disease-control and near-person welfare overhead.

Read on the outpost scaling ladder, holding these unit economics constant:

N = 1 outpost one troop, one sited enclosure order $400K-$850K / year (a single funded augmentation program) N = 10 outposts several species screened in order $4M-$8.5M / year parallel on one protocol N = 100 outposts multi-species augmentation network order $40M-$85M / year N = 1,000 outposts the protocol run at program scale order $400M-$850M / year

The ladder is shown shorter than the field tracks on purpose. Augmentation is a method-development track. Its job is to answer whether supplied capability transfers, and to hand a working non-invasive interface standard to the tracks that run to range saturation. It is not itself intended to run to ten thousand outposts.

10 TIMETABLE

Year 1: species screening, site selection and consent, welfare protocol, non-invasive interface build, and naive baselines taken on voluntary visitors. Year 2: burst-schedule augmented sessions across the set and open conditions. Year 3 onward: post-release batteries on returning animals, wild observation for transmission, and expansion gated on a demonstrated post-release gain and on the welfare stopping conditions having held.

11 PROGRAM STATUS

This is a proposed research program. The release-as-measurement design, the burst schedule derived from the body-representation literature, and the exclusion of invasive interfaces are the current, reasoned direction of the Principal Investigator, to be refined against field results once in operation. The species choice is deliberately unsettled and is scoped as Year 1 work.

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