Pan Survival in the 21st Century: Chimpanzee Cultural Preservation, Rehabilitation, and Emancipation Manifesto

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The Urgency for Chimpanzee Cultural Preservation

This document stems from the data gathered about *Pan* (chimpanzees - *Pan troglodytes* and bonobos - *Pan paniscus*). These were pioneered by J. Goodall's cultural diversity studies of chimpanzees in Gombe, Tanzania (Goodall, 1986) and the genetic evidence of M. Goodman and colleagues (Wildman et al., 2003; Uddin et al., 2004; Goodman et al., 2005). The latter group had demonstrated sister species relatedness between *Pan* and humans, supporting their inclusion into *Homo* genus as: *Homo (Pan) troglodytes* and *Homo (Pan) paniscus*. Together with S. Savage-Rumbaugh's

bonobo/chimpanzee language competency revelations (Savage-Rumbaugh et al., 1998) as well as additional phenotypic, genetic and cultural studies, it is inferred that *Pan* should be reclassified as hominins (Wood & Richmond, 2000; Roffman, 2016).

Chimpanzee/bonobo cultural diversity research of the past 60 years (Whiten et al., 1999; Goodall, 1986; Boesch et al., 2002; McGrew, 1996; Kano, 1972, 1992; Wrangham et al., 1994) supports the behavioral, social and cultural continuity between *Pan* and *Homo*. The research of *Pan*'s linguistic and symbolic competency by S. Savage-Rumbaugh (Savage-Rumbaugh & Levin, 1994; Savage-Rumbaugh et al., 1998; Rumbaugh & Washburn, 2003) provided substantial proof for their high-level cognitive capabilities and psychology, complementing the cultural data from the wild. Demonstration of communicational abilities by English/Lexigram-keyboard language competent bonobos Kanzi, Pan-Banisha and Nyota (Savage-Rumbaugh et al., 2007), together with ASL (American sign language) competent chimpanzees Washoe, Dar, Tatu, Moja (Fouts & Mills, 1997), Lucy (Temerlin, 1975) and other cross-fostered *Pan* – all contributed to blur the language barrier between *Pan* and humans. These are in addition to the cross-fostered gorillas Koko and Michael exhibiting competency in ASL (Bonvillian & Patterson, 1997). Furthermore, research on manual iconic representational action gestures provided data on hominid pantomiming capabilities (Gorillas: Tanner & Byrne, 1996; Parker et al., 1999; Tanner et al., 2006; Orangutans: Russon & Andrews, 2010; 2011).

The authors and colleagues have demonstrated that bonobos are capable of utilizing wood, antler and stone tools at the level of early Oldowan technology, and their long-bone marrow extraction techniques are on par with those of early *Homo*. These studies exhibited their competency to produce pre-agricultural type toolsets and use them task-appropriately in sequential operational chain of actions to achieve an extractive foraging mission (Roffman et al., 2012; Roffman et al., 2015b). Moreover, production of representational mark-making by Kanzi and Pan-Banisha manifested a high degree of similarity to prehistoric cave-art iconography (Roffman, 2008). Noteworthy, these bonobos were capable of recollection and interpretation of the respective meanings of their icons across time. These visual testimonies, along with Lexigram mediated "spoken" ones (Savage-Rumbaugh et al., 2007; Roffman & Nevo, 2010) support *Pan*'s ability to remember events from the past and testify accurately in the present, with future reference.

A recent study of I.R. and colleagues exemplifies *Pan*'s similarity to *Homo* regarding meaningful informational-exchange (Roffman et al., 2015a). Particularly, *Pan*'s competency for giving testimony (figurative and abstract) and having structural bilateral communication with syntax via pantomiming fulfill the criteria for *habeas corpus* (Hall & Waters, 2000). These competencies, together with their musical

abilities, were previously thought unique to *Homo* genus and even to humans. The compilation of evidence gathered across the years, amassed to the display of a vast shared suite of hominin traits in *Pan* (Roffman, 2016), justifying change of their status within our society. We should thus reclassify *Pan* not just in the human ancestral lineage phylogeny, but also as present day human's next of kin (hominins). It is essential to preserve the cultural diversity of these extant last known non-human hominins, by treating them ethically to secure their survival throughout the 21st century.

Pan living in the wild have cultural diversity (Whiten et al., 1999), community-specific medicinal plant use (Wrangham & Goodall, 1989; Huffman, 1997), and survival strategies similar to hunter-gathers/early-hominins (Kingdon, 1993; Ullrich, 1995, 1999). Their eurytopism (generalist diet; Suzuki, 1969; Kortland, 1983) and high phenotypic adaptational plasticity allows them to survive in extreme multi-habitats and even arid environments bordering the Sahel (Duvall, 2000). I.R.'s field research on the cliff-dwelling arid savanna chimpanzees of Mali characterizes their hominin-type adaptations (from diverse nest constructions, nomadism, trail marking, water conservation, extractive foraging and gathering, to enhanced bipedalism; Roffman et al., 2016).

It is hypothesized that Mali's extant *Pan* live under selective pressures paralleling those which existed along the Great East African Rift Valley 4-1 mya, where early hominin/*Homo* have undergone evolution and species diversification (Tuttle, 1975; Jolly, 1978; Vrba, 1985; Reed, 1997; Wood and Strait, 2004). Therefore, they may be regarded as "living fossils" undergoing similar evolutionary processes, exhibiting the cultural heritage of pre-human hominins. These relict, isolated, endemic populations of West African chimpanzees (*Pan troglodytes verus*) are critically endangered and may hold a vast hidden library of evolutionary knowledge. Therefore, they are vital to the study of hominin evolution and cultural heritage, and their habitats should be declared as UNESCO world heritage sites.

Countless populations and cultures of *Pan* have been lost in recent decades due to habitat destruction. Equally tragic are the thousands of chimpanzees which were sacrificed in the name of biomedical research (Peterson & Goodall, 2000). For each young chimpanzee brought into biomed, his/her family members were killed, many of them not surviving the long journeys out of Africa. The massive use of chimpanzees in biomedical research and bush-meat, together with their past trade for zoos, signifies no less than their cultural genocide and extinction.

Chimpanzee cultures inhabiting different ecotypes are unique and represent endemic social and behavioral evolution, including customs and tool use traditions. Sierra Leon and Liberia are examples of countries whose chimpanzee populations were nearly wiped out due to the impacts of local hunting for the biomedical trade (Peterson & Goodall, 2000). Hence, thousands of *Pan* ancient cultural lineages which have never been documented were virtually exterminated, and, for example,

their medicinal plant knowledge that could have provided humanity with invaluable medications was lost forever. *Pan*'s cultural loss is thus equivalent to the destruction of prehistoric pre-human heritage. Noteworthy, the thousands of chimpanzees tortured and sacrificed by the biomedical invasive research had provided only miniscule benefits, compared to what could have been learnt from them through participatory ethnographic field observations.

Cultural diversity of chimpanzees differentiates one population or community from another (e.g., in terms of informational-exchange, group identity, tool preparation/use and group specific markers; Goodall, 1986; Whiten et al., 1999, 2011; Roffman et al., 2015a,b). The lexicons of *Pan*'s informational-exchange in the wild have yet to be deciphered, however, the language competency of captive *Pan* (Savage-Rumbaugh et al., 2007; Fouts & Mills, 1997), as well as that of pantomime-competent chimpanzees (Roffman et al., 2015a) – all demonstrate they have the basic components previously thought unique to human language. These include: meaningful vocalizations (Watson et al., 2015), syntax/vocal learning and control (Roffman et al., 2015a) and individual/group vocal-identity markers (pant-hoots: Goodall, 1986; Crockford & Boesch, 2005; Crockford et al., 2004; Herbinger et al., 2009; Slocombe et al., 2010). This suggests *Pan* language is multi-layered, with their forms of communication having complex structures (Stross, 1976), e.g., in the case of chimpanzee Ronnie's pantomiming (Wales Ape & Monkey Sanctuary, UK) consisting of subject, object, action, and direction (the requisites for syntax in miming). In order to learn *Pan*'s language, one should first build alliances with members of their community via participatory ethnography, then comprehend and interpret their meaningful vocalizations and manual gestures.

Cultural studies crossing the *Pan*/*Homo* sister-species communicational bridge, can be greatly aided by tribal elders who remember times with traditions of peaceful coexistence with *Pan* (I.R. tribal interviews, Mali; Roffman et al., 2016). They have testified of harmonious life between wild chimpanzees and villagers, before foreign hunters and other negative influences infiltrated, and deteriorated the *Pan-Homo* interface into bilateral suspicion and fear. Learning from elder tribal members is currently essential due to modernity and globalization, which weaken tribal cultural generational exchange and alienate youth from their heritage and values. Breaking of taboos and tribal protections traditionally afforded to *Pan*, bring about hunting which results in chimpanzee extinction. It is thus critical to cherish and strengthen tribal *Pan* traditions and cultures to ensure their survival across their range in Africa. From the authors' tribal interviews in Mali it became apparent that *Pan* had a sacred place in tribal heritage, and elders recount how their forefathers learnt medicinal plant use in the distant past by observing chimpanzees. Through reviving these ties, younger generations will be encouraged to learn from their elders, thus preserving their own cultural heritage along with that of *Pan*.

Documenting the elder's testimonies should yield significant *Pan* cultural knowledge as they have lived adjacent to them for millennia. Supporting this generational aspect is paramount to the salvation of their shared cultural heritage. Unfortunately, counterproductive to this were missionary activities which resulted in the disappearance of tribal traditions and ceremonies, including masks, body art, tribal iconography, etc. (Faris, 1972). Our projects, such as "*Brother Chimpanzee*" (in partnership with the Jane Goodall Institute's "Roots & Shoots" humanitarian, educational and conservation leadership program for youth) to be based at the National Zoo of Mali, should aid in the human-chimpanzee cultural preservation endeavor. Furthermore, in partnership with and guided by the elders, marginal relict *Pan* populations living in extreme environmental conditions will be identified, characterized and protected via contracts signed by village chiefs living sympatric to them. This grass-roots level village-by-village contract signing strategy constitutes a viable proven model for ensuring *Pan* preservation and community growth across their range (Roffman et al., in preparation).

Only ~60 *Pan* field study sites have been established in the past 60 years. This is a mere fraction of the ~10,000 *Pan* communities left in Africa, meaning that science has only revealed the tip of the iceberg in terms of studying chimpanzee cultural diversity. The findings of I.R.'s PhD dissertation exemplify the hominin potential of *Pan*, however, what can be further discovered in extreme environments is of great value since such information cannot be inferred through the fossil record.

We are in a critical point in time when countries in Africa open up their natural resources to foreign economic interests, and if these nations do not take strategic measures for ensuring *Pan* territorial continuity and protection of their resources, they will soon become extinct. This means that our sister species will vanish as all other past members of the *Homo* genus had. The drop from over a million chimpanzees at the turn of the 20th century to the current figure of less than 120,000 individuals illustrates the severity of their tragedy (Peterson & Goodall, 2000). Mineral and resource exploitation without implementation of environmental sustainability, results in forest cover dwindling, thus enhancing global warming. Consequently, desertification (spread of the Sahel) and biodiversity eradication occur, critically endangering *Pan* populations. All of these threaten human societies as well, as famine and war over limited resources will increase.

Notwithstanding, chimpanzees are adaptable to change at a hominin level, and if they are not physically threatened and have minimal resources to sustain life (Oikumenes), they will develop survival strategies as a eurytopic generalist species (previously thought a uniquely early *Homo* trait; Bar-Yosef & Belfer-Cohen, 2001). Indeed, the utilization of survival strategies (e.g., extractive foraging, hunting and gathering) by Mali chimpanzees indicate they can live a nomadic lifestyle with population mobility between different habitats (Kortlandt, 1983; Moore, 1985; Duvall, 2000; Roffman et al., 2016; nomadism was regarded a uniquely *Homo* trait:

Hassan, 1979; Wood & Strait, 2004). Preservation of existing chimpanzee habitats and protection of their natural resources and springs, together with planting fruit and shade trees to create green corridors between them, is thus paramount to secure the minimal requirements for *Pan* survival.

Reservations and Sanctuaries as Alternatives to Zoos

Captivity is mentally and culturally degenerative to *Pan*, as zoos, labs and circuses do not allow their cultural preservation and expression. Enrichment keeps them temporarily interested, with their minds distracted from stereotypic behaviors. However, without the development of cultural, group and personal identity, no material culture can be expressed, and after generations in captivity their endemic traditions and customs are lost. *Pan* groups are regularly split between zoos, not allowing alliances and social ties to be maintained across time (Roffman et al., 2015a). This has resulted in extensive mental/psychological stresses and illnesses, including severe trauma, depression and other psycho-pathological patterns of behavior (Bradshaw et al., 2008; 2009). Therefore, a gradual transfer of all *Pan* from captivity to reservations and sanctuaries must take place, since these hominin sister-species to humans should not be imprisoned and exhibited against their will.

As captive *Pan* cannot be relocated to Africa due to health and logistical reasons, substitutes to the wild should be allocated in the form of open reservations. The National Zoo of Mali may constitute a model to this strategy, in which a natural valley with dry creek, cliffs, fresh water spring, wood patches and brush habitat will be fenced so that the chimpanzees can live in a natural environment. The Mali zoo-reservation approach is optimal, as both sites are adjacent and transfer between them is convenient. Chimpanzees and bonobos should no longer be held in cages with climbing playgrounds, that are no different from solitary confinement in a prison. Under such conditions fulfillment of their hominin suite of traits and personal growth are obstructed, hence their cultural development and rehabilitation cannot take place.

Alternatively, a natural environment simulating various habitats with different ecotypes and microclimates, permitting choice of preferred locations, should be designated (Roffman & Nevo, 2010). This was inspired by I.R.'s reconnaissance surveys and interpretation of chimpanzee nomadism, hunter-gatherer and trail marking survival strategies at the Mali field sites (Roffman et al., 2016). Such a reservation should preferably comprise of home-ranges large enough to harbor multi-habitat zones with access to fresh drinking water, trees, bushes, ledges to nest on, and caves/cliff dwellings to hide in. The diverse natural raw materials used for toolsets in food processing, nesting and shelter construction, as well as in other social activities, will be habitat specific.

These opportunities should be provided to *Pan*, since trail marking, mapping and exploring their environment is a significant component of their daily life (Savage-Rumbaugh et al., 2007; Roffman et al., 2016). The different natural resources of the varied locations will encourage strategic planning and develop experiential methodologies for them. Difficult-to-access resources, e.g., logs, hard nuts and underground tubers, will bring about the necessity to produce and use complex toolsets for extractive foraging. This will encourage group alliance building, social cohesion and sharing, which are common in wild *Pan* cultures (Goodall, 1986; Whiten et al., 1999; Boesch et al., 2009). The proposed reservations will thus provide a suitable environment for the personal and cultural rehabilitation of *Pan* released from captivity. Since *Pan* has exceptional adaptational plasticity, it is expected that any multi-habitat natural environment providing basic resources will be suitable for them. The number of chimpanzees populating such a reservation depends on its size, topography, and the availability of sustainable resources.

Moving captive chimpanzees to multi-ecotype reservations will enable a better future for *Pan* living outside of Africa. Ethically, we cannot continue to ignore *Pan*'s suite of hominin traits (Roffman, 2016) shared to a level of sister-species with humans (Uddin et al., 2004), with the genetic evidence supporting their reclassification as early *Homo* (Wildman et al., 2002; 2003). Therefore, members of our genus cannot be forced to be held captive without being able to fulfill their hominin cultural potential, and *Pan* should be regarded as hominin. If we were to find another extant member of our *Homo* genus, it would be equally unethical to hunt, capture, separate families or imprison them, and not learn everything we can by observing their cultures and behaviors. As *Pan* embodies our early *Homo*/hominin cultural heritage, we must respect and learn from them, as they carry the secrets of our own past.

There is a limit to how much can be interpreted from the fossil record, hence, *Pan* ethnographic observations are critical to the full understanding of hominin suite of traits, cultures and competencies. *Pan* like humans carry the genetic baggage of millions of years of hominin evolution and millennia of cultural heritage. We must not lose *Pan* populations in captivity to psychological degeneration, since life without personal/group identity and culture is empty. Enabling *Pan* to express their competencies is as important as socialization, learning, cultural development and immersion for a child in a tribe. Production and appropriate sequential utilization of stone tools (paralleling early Oldowan light duty and heavy duty tools) for breaking logs and long-bones by *Pan* (resulting in wear-patterns equivalent to those produced by *Homo*/hominins; Roffman et al., 2012 ; 2015b ; 2018 in preparation), can no longer be designated merely as made by great apes (hominids), but rather by extant hominins. Furthermore, those who can write, paint, produce, interpret and recollect cave-art type iconography should be provided with means to do so, be freed and regarded as *Homo* (Roffman, 2008).

From Captivity to Freedom

Parallels can be made between the personal/cultural devastation of captive *Pan* to those of enslaved or concentration camp imprisoned humans (Davies, 1971). These include transport conditions, mortality rate, tattooing numbers and the removal of any sign of selfhood, heritage, customs, and cultural identity. Furthermore, splitting up families, erasing privacy, dignity and choice, result in the ruin of their cultures and traditional ways of life. The "closed systems/facilities" do not allow any previous cultural attributes to be remembered or expressed, as they were eliminated by captivity. For rehabilitation to occur, they must be freed from these closed cages and be allowed to fulfill their potential and revive their cultures. These "closed systems" should be "opened" (Davies, 1971).

The personality and behavior of the demoralized captive *Pan* changes drastically compared to their natural counterparts. Wild *Pan* have been shown to exhibit moral order and social rules and to differentiate between right and wrong (Goodall, 1986). As a result of years of oppression and forced incarceration, chimpanzees in captivity have developed apathy and aggression towards humans as well as towards themselves. Their inability to maintain communal stability in captivity, brings about immeasurable stress and depression, culminating in PTSD (post-traumatic stress disorder; Bradshaw et al., 2008; 2009), psychosis and self-mutilation (especially in biomedical facilities; Roffman & Nevo, 2010). Henceforth, mental, social, cultural and personal rehabilitation is imperative for *Pan* to survive and be fully liberated.

Furthermore, exposure to public observation is a known cause for stress in captive *Pan*. For example, before the renovated Mali zoo was opened to the public, the chimpanzee cage enclosure was green with brush and fruit trees. However, once visitors were allowed access to the zoo, the vegetation was cleared by the chimpanzees as a sign of distress (I.R. & M.P.'s personal observation). Therefore, display of *Pan* must be voluntary and not conducted by means of forced exhibition, as it was realized to be unethical to exhibit human tribal members in zoos at the turn of the 20th century and deformed humans in sideshows decades later. The current hominin reclassification of *Pan* places them outside of the animal realm, and into the prehuman family lineage. This has moral implications for ending their treatment as property and providing them with personhood (Hall & Waters, 2000).

In order to ensure *Pan* survival we must preserve their wild cultures and rehabilitate those in captivity. A global *Pan* reservation, liberation and cultural rehabilitation program will undoubtedly result in invaluable anthropological and ethno-archeological discoveries. These include cultural, behavioral, language lexicons and all other evolutionary developments previously regarded as uniquely *Homo*. Reinstating *Pan*'s freedom to hunt, gather and employ extractive foraging strategies

for their sustenance will largely free them from their dependency on humans, allowing their communities to focus on reestablishing their group identities and cultures. Such a strategy will require the foundation of self-sufficient nature reserves with sustainable resources.

This program will rebuild trust between chimpanzees and humans enabling participatory ethnographic observations to conduct a comprehensive long-term study of *Pan* cultures. For deciphering *Pan*'s language lexicon of meaningful vocalizations and gestures (otherwise not possible to fully witness in the stressful captive and unnatural settings; Roffman et al., 2015a), researchers should build alliance with one of the chimpanzee leaders in a group, enabling the observer to access their society. Moreover, providing *Pan* with freedom will reduce the level of inner/inter group aggression, also allowing for bilateral informational-exchange to take place between chimpanzees/bonobos and humans, thus bridging the communicational gap between the two. Under such circumstances, humans with cognitive developmental delay may be aided by the cross-cultural communicational exchange with *Pan*. They will both be able to converse in miming, meaningful vocalizations, iconographic representational art and music, resulting in the acquisition of new skills by the disabled people, with both sides benefiting from this meaningful interaction (Rumbaugh et al., 2016).

Pan families in captivity are formed artificially as chimpanzees are transferred regularly from one zoo to another to maintain small exhibits facilitating breeding and reducing aggression within a group. This is the opposite of *Pan* social structure in the wild, which is based on strong generations-longs alliances, family groups and coalitions within communities (Goodall, 1986). Zoos have always maintained familial severing causing great stress to *Pan*, who fear strangers and social change. Sadly, lifelong familial relations are not given consideration in captivity, and in biomed this has been taken to the extreme, where they have for decades been deprived of all social interactions, being caged alone (Peterson & Goodall, 2000). To correct this and rehabilitate *Pan* in captivity, they should be allowed to have their own stable community support, permitting formation of alliances and healthy familial relationships based on trust and sharing. Open reservations will alleviate conflicts, enable privacy and peace establishment via chimpanzees splitting into sub-groups.

Bridging the *Pan-Homo* communicational barrier by comprehending their body language, facial expressions and learning their meaningful vocalizations and gestures, will further support tension relief (Savage-Rumbaugh et al., 2007; Roffman, 2016). Deprivation of *Pan* from their cultural attributes and the expression of their hominin suite of traits results in the deterioration of their mental stability. Zoo and laboratory chimpanzees can thus be compared to isolated "wolf-children" (Malson, 1972) not permitted to develop their cultures, identity, personality and high level mental competencies. The Bonobo Hope Sanctuary (BHS) in Iowa, USA, housing

the *Pan/Homo* bi-cultural Wamba family of the language competent bonobos Kanzi, Pan-Banisha and Nyota (Savage-Rumbaugh et al., 2007), enabled the expression of their full cultural potential. In this semi-captive sanctuary their *Homo* traits were expressed to a great extent, unlike those previously described at any other *Pan* captive site.

The knowledge accumulated for *Pan* over the years (Kano, 1972; Goodall, 1986; Corbey & Theynissen, 1993; Wrangham et al., 1994; Whiten et al., 1999; McGrew, 2004; Boesch et al., 2002) argues against their continued confinement in degenerating conditions. We must take responsibility to protect and preserve our only living sister-species, and allocate proper environments for them that will ensure their survival both in captivity an in the wild. Man has destroyed their habitats, exterminated their cultures, and has driven their populations to the brink of extinction. It is thus time for *Pan* to receive their rightful place in the pre-human family lineage of hominins. Time has come for us to treat the remaining *Pan* with dignity, protect their habitats in the wild, take action towards their emancipation from captivity, and learn from them about our own evolution. Studying their survival strategies, e.g., tool making, shelter construction and medicinal plant use, should open a window to the understanding of our ancient past, and the data collected will harbor the potential to benefit present day humanity.

Cultural Rehabilitation

To materialize *Pan*'s social and cultural rehabilitation, it is vital to provide them with expansive terrain to enable the expression of their spatial cognition/mapping skills. This will allow allocation of task-specific areas for, e.g., raw material gathering, resource extraction, tool making, food processing, nesting/dwelling (cliffs, ledges and caves), social activity sites and trails to enable nomadism. These attributes are all critical hominin survival strategies found in Mali chimpanzee cultures (Roffman et al., 2016).

Being separated for decades from their cultures and families in Africa, and transported to zoos or laboratories (Peterson & Goodall, 2000), *Pan* were deprived of their customs and traditions, having no access in captivity to suitable raw materials or natural surroundings that allow their fulfillment. Hence, *Pan* in zoos had to reinvent their language and group identities among other cultural attributes (Roffman et al., 2015a; Watson et al., 2015). Noteworthy are the toolset competencies exhibited by semi-captive (sanctuary) *Pan*, using them in sequential actions to extract preferred resources at a level of early *Homo* (Roffman et al., 2012; 2015b); similar observations were documented for wild chimpanzee cultures (Hernandez-Aguilar

et al., 2007; Boesch et al., 2009; Sanz and Morgan, 2007). Cultural rehabilitation for captive *Pan* can be possible if they are permitted to live in suitable reservations, individual alliances and familial relations will be formed and mark the beginning of community rebuilding. Since *Pan* have been shown to have moral order (e.g., parental/rules obedience, punishment/sanctions, alliance building and caring for the weak and disabled; Goodall, 1986; Roffman et al., 2015a) we should enable them to fully develop these characteristics.

Cultural rehabilitation after liberation from imprisonment is possible, as seen in the cases of freed slaves and concentration camp prisoners (Davies, 1971). I.R.'s research on alliance building, personal identity, and cultural attributes in *Pan*, suggests that release to reservations will not only enable reconstructing *Pan* communities, culture and social order, but should also ameliorate their mental and psychological conditions. The appreciation of *Pan* to the betterment of their living conditions was manifested in the case of Mali zoo chimpanzee Samba's alliance with I.R. after new clear water sinks and a pool with water plants and fish were installed, traditional mud hut dwellings were built for privacy, and fruit trees planted in their enclosure. This covenant exemplifies *Pan*'s moral order, in which Samba was serving as an interpreter instructing the other two chimpanzees to respect the author's good will (Roffman et al., 2015a).

On the Road Towards a Better Future

Cultural rehabilitation of *Pan* prior to their relocation to reservations should begin with preparatory steps for self-procurement, such as the challenging preferred-resource extraction strategies employed by the authors. Nowadays captive *Pan* are not living to their full hominin potential as their surroundings deny them personal autonomy and agency. They live out their imprisoned lives in boredom, their welfare in captivity is compromised, and aside from mere survival their future is hopeless. This is the result of human society ignoring *Pan*'s place in the pre-human lineage as hominins. Such reclassification, supported by social, cultural, cognitive and genetic data, should provide them with the basic rights to fulfill their existence as members of our genus. We have no other scientifically recognized extant sister-species and the way we have treated them so far is unacceptable. Just as ancient humans eradicated other members of their *Homo* genus, we currently execute that on extant non-human hominids (gorillas and orangutans) and hominins (chimpanzees and bonobos). Their populations are decreasing rapidly, mainly due to hunting, deforestation and mining. As a result, vast habitats have been destroyed, most of their communities have been exterminated, and the danger of their extinction is more tangible and imminent than

ever before. Therefore, we now have the last chance to preserve these critically endangered populations, after conquering nature and exploiting it unsustainably solely for the benefit of mankind.

Chimpanzee cultures today mirror our prehistoric past. They have survived on earth long before humans, and we have much to gain by learning from their cultural diversity and medicinal - plant/mineral uses. As evidenced throughout history, humanity can be highly destructive, but may also be highly constructive and we must take immediate action to protect *Pan* habitats by saving entire ecosystems of immense biodiversity and resources, prevent desertification, combat climate change and restore natural stability. These efforts will result not only in the preservation of chimpanzee cultural diversity, but also in conservation of the rich historic cultures of tribal indigenous communities sharing these environments.

Chimpanzees are a species with high phenotypic adaptation plasticity, meaning they are adaptable to different habitats, even in extreme environments. According to our hypothesis the relict marginal populations of chimpanzees surviving in low resource near-arid environments (Suzuki, 1969; Kortlandt, 1983; Moore, 1985; Duvall, 2000; Pruetz, 2007) evolved parallel adaptations to those of hominins living along the Rift Valley (Tuttle, 1975; Vrba, 1985; Ullrich, 1995; Reed, 1997; Wood and Richmond, 2000; Bar-Yosef and Belfer-Cohen, 2001; Wood and Strait, 2004; Plummer, 2004). These include varied survival strategies, e.g., nomadic mapping via trail marking, extractive foraging, hunting and gathering, diverse nest type constructions, living in cliff dwellings, and exhibiting a high degree of bipedalism (Roffman et al., 2016). In fact, *Pan* fossils were recently found at Kapthurin Formation, Kenya, on the Rift Valley, evidencing the first example of *Pan/Homo* sympatric living, undergoing parallel selective pressures as seen in *Pan*'s dental wear, suggesting low resource availability (McBrearty & Jablonski, 2005) as in Mali. Therefore, the near-arid savanna chimpanzee survivability is feasible, provided that their marginal habitats are preserved and connected between them, and the tribal traditions of *Pan*-human coexistence are restored. Their existence in Mali signifies the cultural potential for other marginal *Pan* habitats in Africa, indicating that we must establish as many field sites as possible in these environments to fully uncover their early *Homo*/hominin suite of shared traits. Through tribal leadership/partnership and contract-based programs, *Pan* populations will revive, even returning to regions where they were extirpated from. Furthermore, planting fruit/shade trees to connect between isolated *Pan* communities, and encouraging sustainable pastoral agriculture, should help to renew the chimpanzee/human peaceful living (Duvall, 2000; Roffman et al., 2016). Also, indigenous youth should be motivated to learn from their elders about past traditions of *Pan* cultures, since these are currently being severed due to outside influences like modernization or religious missionaries. *Pan*'s cultural protection is thus directly connected to the preservation of both tribal heritage and biodiversity in Africa, and their survival is our survival.

Personhood, Sanctuary & Reservation Rights

Bi-cultural language-competent bonobos Kanzi and Pan-Banisha demonstrated high mental competencies at the level of early *Homo* as regards Oldowan type multi-stage sequential tool use (Roffman et al., 2012; 2015b). They also demonstrated representational mark-making iconography production and their respective meaning recollection across time along with interpreting hieroglyphic-type icons in human cultural terms. Therein, *Pan* demonstrated indexicality (prominent attributes representing a whole object; i.e., feather=>bird; foot print=>lion, etc.), associative and abstract thinking – all thought previously unique to later *Homo* and humans (Roffman, 2008). Furthermore, male chimpanzee Ronnie demonstrated use of pantomime via informational-exchange in human terms (by visual syntax of subject, object, action and direction). Kanzi had left a "written" message that only I.R. could interpret, by etching the Hebrew symbol "*Chai*" (חי) with his fingernails on a laminated Lexigram paper that he ripped open, referring to a shared experience they had several months earlier. Mali zoo female chimpanzee Fatim demonstrated understanding of rules and social sanctioning, through being scolded by male Samba after she tried to pull down the authors' pants. Her immediate apology in submissive fashion (with hands above her head, crouching down in front of Samba) suggests she was genuinely sorry for breaking the rules of his alliance with the author, based on friendship and moral responsibility. All of these exemplify that *Pan* have a wide variety of *Homo* traits, control their actions, understand codes of social conduct, and thus deserve basic legal rights (as described for humans in: Waldron, 1989).

Personhood rights are stated to be conferred to those who have high-level mental competencies, and given by virtue of being human. However, since *Pan* exhibit a high degree of shared suite of traits with hominins, they too deserve to be included in that category. In addition to the aforementioned, they produce and properly use pre-agricultural tools, have early *Homo* type foraging/hunting/gathering capabilities, and even show the architectural prerequisites for shelter construction. Moreover, they are eurytopic (generalist species), develop habitat-specific survival strategies and frequent bipedalism, thus fulfilling the criteria to be reclassified as hominin/early *Homo*, and deserve the basic rights for personhood. Such would be given to any other members of *Homo*/hominin if theoretically they were to be found alive today. In more detail, *Pan*'s competencies are parallel to those of *Australopithecus* and *Paranthropus* hominins, up to the level of *Homo habilis* early Oldowan tool production and utilization abilities, including appropriate sequential action use of stone/antler/wood toolsets, even in long bone marrow extraction. These have resulted in *Homo*-type tool specific wear-patterns (macroscopic) on the substrates and the stone-tools themselves (microscopic), which exhibited "finger prints" of appropriate tool and action-specific function [hammer, chopper, wedge, shovel (heavy-duty

tools); drill, scraper, cutter (light-duty tools): Roffman et al., 2012; 2015b; 2018 in preparation].

Henceforth, *Pan* can no longer be legally categorized as "property", as they define their own property (Hall & Waters, 2000) and are hominin beings who should live in freedom, possessing personality and selfhood as members of a community with unique group-identity and culture. They should be allowed to live their lives peacefully in a meaningful way with interests and goals, and fulfill their personal potential, without constant fear, trauma, torture, and the risk of death by being imprisoned. They ought to live through personal agency and cultural protection, conducting free daily life within their socially supported communities. As there are 'natural rights of humans' (Waldron, 1989), likewise there must be natural rights of *Homo*/ hominins.

Once social attitudes towards chimpanzees change, restoration of their cultures becomes possible, and their welfare is significantly improved. Referring to them not as "object", "property" or "animal", but as our sister-species, will enable bilateral informational exchange between *Pan* and humans. Ending fear, boredom and stress together with PTSD treatment is paramount to their mental health restoration and rehabilitation (Bradshaw et al., 2008; 2009). Leading their own cultural life will give them new hope, with a sense of worth, strength and pride in their unique *Pan* identities. As a result, their dependency on human caregivers shall diminish, and they will progress towards independent sustenance (as observed in our extractive foraging research: Roffman et al., 2012; 2015b), a key step for emancipation and autonomy. They will develop personal/group responsibilities and interests, adopt daily routines, and reestablish moral order, care and group cooperation. The most prominent example of *Pan* living in semi-captive/sanctuary conditions was demonstrated by the bicultural bonobo Wamba family, in which emphasis on individual empowerment and self-fulfillment proved its efficacy (Savage-Rumbaugh et al., 2007). It is our moral obligation for *Pan* in captivity to replicate this model and liberate chimpanzees from laboratories, zoo enclosures and entertainment worldwide, as a first phase towards their future release back into nature. After over a century of atrocities inflicted upon *Pan* by humans both in captivity and in the wild, time has come for reparation of and reconciliation with our closest living relatives.

Emancipation and Declaration

The acquisition of basic rights allows for wellbeing and the fulfillment of personal interests and goals. Provision of individual and community rights to all hominins will enable their cultural preservation and protection. Freedom of choice and movement in a safe expansive natural environment with diverse enriching activities

will help rehabilitate *Pan* cultures. Liberation entails a wide range of occupations that natural reservations permit, from setting forth their own rules and norms to making their own daily life decisions. Granting autonomy in a protected area to individuals and groups will ensure their rights and security and enable them to control their lives, care and sustain themselves (Waldron, 1989).

Rights and autonomy are given to those who have bilateral informational-exchange, symbolism, rational, moral order and social organization, as described for humans (Waldron, 1989) and should also be given to *Pan* who meet these criteria (Roffman, 2008; 2016). Awarding *Pan* with autonomy and self-determination will ensure their freedom of action as well as expression of their potential without apprehension of personal harm of any kind, which is essential for the continuity of their cultural existence. Such rights of freedom and independence were hitherto endowed solely within the human society, and we hereby proclaim to apply them upon *Pan* as well. The ability of chimpanzees to express their individual and group identities, as well as extensive cultural potential, entitles them to self-determination. This should be applied for all extant and extinct hominins.

An international league for *Pan* liberation, cultural rehabilitation and preservation is hereby established through this manifesto. We call upon all nations harboring *Pan* to either provide land for their reservations or transfer them to those able to do so. States with wild *Pan* populations will be requested to designate specific home ranges as hominin cultural heritage sites with indigenous responsibility for their protection. For historical purposes, a "black album" will be compiled with all the atrocities chimpanzees have undergone in biomedical laboratories. The relevant data will be gathered via the utilization of the freedom of information act (FOIA) law. Furthermore, comprehensive documentation of indigenous African tribal knowledge on *Pan-Homo* relations, traditions and cultural observations will be produced. This is the time to release *Pan* from laboratories, zoos and entertainment, as we can still save our sister species both in captivity and in the wild, ensuring their survival through the 21st century and beyond.

In Memory of: Prof. Avraham Ronen (1935-2018)
Dr. Simcha Löw (1899-1981)
Elizabeth Rubert-Pugh (1957-2019).

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