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Cross-Species Hybrids and Bioethics in Early Soviet Fiction

SUMMARY

My article addresses issues of bioethics in cross-species hybridism raised in Robert and Beylis' well-known "Crossing species boundaries" (2003) and the ensuing discussion by examination of two important stories written in the Soviet 1920s, "A Dog's Heart" and "The Amphibian Man". I argue that these two fictional narratives show that literature not only responds to changing trends in biological sciences but also heuristically considers and intuits wider social implications of radical experimentation. My approach is both synchronic and diachronic as I demonstrate that while being grounded in the same reformative atmosphere of the 1920s, the two texts present divergent responses to the issue of cross-species hybridism relevant for our contemporary debates. In particular, I deal with the notions of man playing God, species identity in analogy to 'race', procreation of human-animal hybrids, and also consider the relevance of culture-specific concepts of charismatic and distant species for cross-species discourse.

Keywords: human-animal hybridism, species identity, bioethics and experiments in Soviet fiction and science.

INTRODUCTION

Crossing species boundaries has fascinated both writers of fiction, its readers and, proactively, scientific experimentation. The dynamic between science and speculative writing has been a two-way process and it is not always easy to determine which of these imitates the other. However, in matters of bioethics literary texts have historically taken the lead both pre-empting and reacting to excesses of scientific experimentation. Among many responses to Robert and Beylis' well-known article on human-animal hybridism published in *The American Journal of Bioethics* (2003) there was a short response that dealt with the relevance of this article to science

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fiction. The response focused on iconic texts, *Frankenstein* and *The Island of Doctor Moreau*, and argued that science fiction functions as an analogy to science (Brem & Aninjar, 2003). This compact rejoinder states that ethicists and scientists should consider fictional narratives that address ethical issues regarding hybrids and chimeras. My article addresses relevant points on cross-species hybridism raised in Robert and Beylis' "Crossing species boundaries" by examination of two important stories written in the Soviet 1920s. The two texts under examination are Mikhail Bulgakov's celebrated novella "A Dog's Heart" (1925) and Aleksandr Belyaev's *The Amphibian Man* (1928) – a popular novel within Russia and the former Soviet Union but not well-known or studied outside this cultural domain. I argue that these two fictional narratives show that literature not only responds to changing trends in biological sciences but also heuristically considers and intuits wider social implications of radical experimentation. My approach is both synchronic and diachronic as I demonstrate that while being grounded in the same reformative atmosphere of the 1920s, the two texts present divergent responses to the issue of cross-species hybridism relevant for our contemporary debates. I structure my article around the points formulated by Robert and Beylis and raised in ensuing discussions around issues of bioethics in relation to human-animal and non-human animal hybrids. In particular, I deal with the notions of man playing God, the relevance for hybridism of analogy between species identity and 'race', procreation of human-animal hybrids, and also consider the significance of culture-specific concepts of charismatic and distant species for cross-species discourse.

Although written in the 1920s during a relevant heteroglossia of this post-Revolutionary decade the two texts have very different histories of reception. Bulgakov's story was not published in the Soviet Union till *glasnost* reforms, and the first film adaptation was made only in 1988. The story was perceived as a parody on the post-Revolutionary Soviet social experiment (Krementsov, 2013, p. 129). Belyaev's story was published many times since its first appearance, and the film adaptation released in 1961 was seen by some 65 million viewers. The two stories thematically mirror each other as while they develop similar plots around scientific experiments on human-animal hybridism, the actual hybridisation through organ transplantation uses different donors. In "A Dog's Heart" human organs are implanted into a dog, while in *The Amphibian Man* shark's gills are implanted into a human. In both stories, human-animal organ transplantation is conducted by medical doctors, the purpose of transplantation being arguably anthropocentric as it aims at improvement of human health, vitality and longevity. Both operations are radical as they involve reanimation – a trope for resurrection. Yet authorial attitude to these experiments is different, with Bulgakov's narrator criticising experimentation and Belyaev being in support of radical science and medicine. The two writers' political views influence

their attitude to scientific experiments on both humans and animals, Bulgakov targeting atheistic Soviet science and Belyaev showing the limitations imposed on free science and medicine in colonial capitalist society. Additionally, *The Amphibian Man* addresses non-human animal cross-species hybridity which adds a further comparative aspect to bioethical issues of hybridism. These points of plot similarity and evaluative difference lead us first of all to one of common bioethical concerns registered by Robert and Beylis, the question of set hierarchies of species and religious underpinnings of this conception of the world order.

In Robert and Beylis' approach there is no fixed species identity. They argue that this fact of biology, however, in no way undermines the reality that fixed species exist independently as moral constructs. In my examples the two texts have different approaches to "species identity" (Robert & Beylis, 2003, p. 2). Bulgakov's text advocates preservation of boundaries while Belyaev's science fiction novel supports the feasibility of cross-species transformations.

MORAL UNREST WITH CROSSING SPECIES BOUNDARIES: "MAN PLAYING GOD"

Robert and Beylis demonstrate that one of the arguments often used against hybridism is linked to humans playing God:

> According to some, crossing species boundaries is about human beings playing God and in so doing challenging the very existence of God as infallible, all-powerful, and all-knowing. There are, for instance, those who believe that God is perfect and so too are all His creations. This view, coupled with the religious doctrine that the world is complete, suggests that our world is perfect. (Robert & Beylis, 2003, p.7)

These authors also document an existing counterargument to this thinking as some commentators argue that not only it is *not* wrong to play God, but rather this is exactly what God enjoins us to do. Proponents of this view maintain that God left the world in a state of imperfection so that we become his partners. This view, I contend, intersects with secular arguments that we can manage nature's imperfections.

The two texts, "A Dog's Heart" and The *Amphibian Man*, were written in the decade that fostered scientific and popular discourse that intersects with the second set of arguments based on the specific social political environment in the Soviet Union. The Bolshevik science that emerged in the 1920s was obsessed with the conquest of death and scientific reanimation (Krementsov, 2013). Paradoxically, in this decade the boundary between religious and scientific aspirations could be blurred. Huge human losses in World War One, the Bolshevik Revolution and the Civil War created a unique culture that was preoccupied with immortality. As Anindita Banerjee argues,

the 1920s blended "the secular forces of mechanisation, manifested in capitalist technologies of biopower and the Bolshevik model of the New Soviet Man, and the Russian spiritual paradigm of God-building, in which imperfect humans can be transfigured into physically and morally superior entities" (Banerjee, 2022, pp. 15-16). Relevant success in experiments in blood transfusions and isolated cross-species organ and tissue transplantation created a culture of scientific mass euphoria (Krementsov, 2013). Thinking of human-animal hybridism it has to be noted that Ivan Pavlov's laboratory experiments on dogs were underpinned by the notion of cross-species compatibility (Mondry, 2015). The production of canine gastric juices to be consumed by humans to aid digestion is based on the idea of animal-human hybridism on the level of metabolism and secretion. Significantly for Pavlov, who started his education as a student of a Christian seminary, this Promethean quest to improve human beings by cross-species quasi-hybridization did not present a moral or religious problem (Todes, 2002). With the Russian Orthodox Church's imposed separation from the state and the absence of any public debate on the ethics of biological and medical experimentation, fictional narratives step in as a form of the culture's reaction to emergent trends.

In Bulgakov's "A Dog's Heart" human organ transplantation into a dog is made by a professor called Preobrazhensky, a surname that stands for both secular transformation (*preobrazhenie*) and also for a New Testamental Christian religious transfiguration. Bulgakov's irony in this conflation of scientific and religious pathos demonstrates his perception of new trends in his contemporary society. Symbolism embedded in Preobrazhensky's surname and action corresponds to the bioethical argument that man becomes God's partner in improving God's imperfect creations (Robert & Beylis). This argument intersects with the secular view of the imperfection of nature's creations. Preobrazhensky embodies this dynamic. While Bulgakov is critical of this cross-species experiment, technically the experiment proves the compatibility of human and animal organs.

In line with the literary plots of the Frankenstein and Dr. Moreau's cross-species experiments, this particular experiment has unpredicted consequences for its creator. As noted by Glendening, the Creature in Shelley's *Frankenstein* and the hybrid Beast Folk in H. G. Well's *The Island of Doctor Moreau* present a case of their creators' not being able "to control the consequences of their action" (2022, p. 589).[1] At this thematic level Bulgakov's narrative aligns with the intersection between the bioethical and religious argument that is critical of "man playing God". As a son of a professor of theology Bulgakov has concerns about cross-species transplantation. He enmeshes

[1] This study is not intended as a comparison between the two Russian texts and Shelley's and H. G. Well's novels. I refer to the latter two as works better-known to a wider readership to highlight some thematic continuities and main differences in authorial views that reflect different historical agendas.

bioethical themes with a social satire on the Soviet project of human transformation by making Professor Preobrazhensky use human material from lower social classes. It is the transplantation of the organs of the drunkard Klim that transforms a likable street dog Sharik into an impossible human being. Subsequent surgical removal of these human organs reverts the debaucher back into a smart dog. Much as in James Whale's 1931 iconic film adaptation of Shelley's *Frankenstein*, the genetically faulty human material in "A Dog's Heart" is responsible for an unfortunate outcome of the experiment (Golovacheva, 2022).[2] This common detail reflects the rise of eugenics in the West and in Soviet Russia where, according to Krementsov, it "became an influential cultural resource" for both writers and scientists by the middle of the 1920s (Krementsov, 2011, p. 78).[3]

Experiments gone wrong and fear of unforeseen results is another consideration in issues of bioethics in the topic of human-animal hybridism (Robert & Beylis; Hubner, 2018). This fear does not always have overt religious reasons but is one of the aspects of the domain of "man playing God" in cross-species experiments. Bulgakov's story deals with this issue and can be interpreted on religious and secular levels. Overtly, the cross-species organ transplant operation was aimed as a rejuvenation experiment. The second goal was to test whether human organs will be accepted by the canine organism (Fratto, 2021, p. 176). Professor Preobrazhensky transplants a human pituitary gland and testes in order to study cellular rejuvenation. The resultant hybrid is an unexpected and unplanned creature – a resurrected Klim with some traces of canine behavior. As such the experiment is emblematic of the fear that often underpins bioethical discourse about the unknown results when man plays God, thus proving that man is *not* God's equal.

In Preobrazhensky's re-evaluation of his experiment he for the first time in the text refers to eugenics and in a confidential conversation with his assistant elaborates on the absurdity of attempts at "improving human nature" by constructing artificially-aided human geniuses. Here Preobrazhensky repeats verbatim the definition of eugenics by its main Soviet proponents (Maguire, 2009, p. 26). Having experienced the unpredictability of his own experiment, Professor concludes that one should rely on nature and evolution for producing men of genius.[4] The inability to penetrate

[2] I thank an anonymous referee for recommending this article.

[3] On the history of eugenics in the Soviet Union see Krementsov (2011 and 2013) and Adams (1990) whose work shows that in the 1920s eugenics was an umbrella for experimental biologists, animal geneticist, and physicians, among other professions. Soviet Marxists "liked genetics and eugenics for their experimentalist, materialist and non-religious approach to the human condition" (Adams, 1990, p. 169).

[4] Preobrazhensky says: "I was concerned with [zabotilsia] something else, eugenics, the improvement of human nature. And ended up by performing rejuvenation" (Bulgakov, 1988, p. 609).

into the hereditary composition of the donor-brain serves as a reminder of human limitations in "fabricating" biological organisms (Bulgakov, 1988, p. 608).

The plot of Belyaev's *The Amphibian Man* is based on adventure, and is set not in the emergent Soviet Union but in capitalist Argentina. It thus addresses not the new Bolshevik science but its opposite, science in capitalist society. While Bulgakov aims at criticism of the new atheistic discourse Belyaev does the opposite, and attacks Catholic religious leaders' retrograde position against scientific experiments. In this science fiction adventure story, a doctor of European descent reanimates a Native American boy by implanting shark's gills to compensate for his week lungs. As a consequence, the boy becomes amphibious, and can live under water and on earth but only for limited amounts of time. Having performed this successful operation, the doctor abandons medicine and becomes a full-time scientist who conducts his experiments in great secrecy (in line with the obsessed scientist narrative).[5] Once his activities are discovered, the all-powerful Catholic church helps to build a court case against him, and this subplot deals with a set of arguments used by the clergy against Doctor Salvator and by Doctor Salvator in his self-defence. The courtroom becomes a place for exchange of these opposing arguments vis-à-vis creationism, evolutionism and hybridism. The church predictably accuses Salvator of sacrilegious denial of God as the almighty Creator of perfect creatures, while Salvator presents an argument that was singled out by Robert and Beylis as a common one in current bioethical debates related to creationist model, about the necessity to continue creation's work and improve imperfections of nature:

> Man is not perfect. Having received great advantages compared to his animal ancestors in the course of evolution, we have, at the same time, lost much of what we had from lower stages of our animal development. (Belyaev, p. 132)

Belyaev makes Salvator confront simultaneously creationist thinking and to challenge a passive acceptance of evolutionism, looking for a number of reasons to improve human species. In Salvator's thinking creating hybrids from evolutionary distant species, such as mammals and fish or, in the case of Ichtiandr, Homo Sapiens and fish, will improve the longevity and vitality of human beings:

> I was particularly interested in the problem of exchange and transplantation of tissues between distant species—for example, between fish and mammals, and vice versa. In this area, I accomplished what scientists considered impossible (Belyaev, p.140).

[5] Of note is that Preobrazhensky's apartment also functions as a secret laboratory for his clandestine experiments.

Setting the plot in a Latin American country allows Belyaev to introduce a third party, the voice of the indigenous people. While Salvator is of European descent as are the Catholic clergy, Salvator's patients come from the indigenous population. For them the notion of man *playing* God is not relevant as in their opinion "Salvator is God and saviour" (Belyaev, p. 22) who came to earth to protect them. (Note that his name, Salvator, connotes Saviour.[6]) Thus, their syncretistic polytheist and Christian beliefs affect their perception of Salvator's activities. Belyaev takes the role of culture-specific categories into account when he describes the native people's perception of the amphibious man. They view him either as a sea-God or a sea-devil – an image that incorporates traditional beliefs influenced by the propaganda discourse propagated by the Catholic clergy. The notion of sea-God as a composite creature accepts the cross-species hybridism that the Christian clergy find abominable. The novel makes us question whether Western arguments around "Man playing God" in matters of cross-species hybridism can be classified as a universal issue in bioethics.

SPECIES IDENTITIES AND 'RACE': ON ANALOGIES

When thinking about classificatory category of biological species identity Robert and Beylis make a comparison with the category of race. They argue that neither has biological or essentialist reality but both have a long history and relevance for issues of morality:

> (There is here an analogy to the recent debate around the concept of race. It is argued that race is a biologically meaningless category, and yet this in no way undermines the reality that fixed races exist independently as social constructs and they continue to function, for good or, more likely, ill, as a moral category.) This gap between science and morality requires critical attention. (Robert & Beylis, 2003, p.6)

To parallel the morality debate around questionable fixed boundaries in relation to the creation of human-to-animal beings, Robert and Beylis stress that members of certain 'races' historically were denied moral standing as members of the human community. Both these categories – species and race – often derive from previous faulty ideas. Of particular relevance to my focus here are such faulty ideas as the ranking of species, hierarchies of 'races' and cross-racial 'miscegenation'. In 1999 Mishler argued that a way forward in the categories of species is to remove the ranks in "the old and misguided classification". In his view, "*the species rank must disappear with all the other ranks*" (Mishler, 1999, p. 306 [emphasis in the original]) As Wasserman observes in his response to Robert and Beylis' article, historically hierarchical taxonomies of species and categories of race developed in parallel to one

[6] I am grateful to an anonymous referee for pointing out this detail.

another. Related to cross-species hybrids is the notion of miscegenation because the category of isolated biological species served as a justification for laws prohibiting cross-racial sexual contacts and marriage (Wasserman, 2003, p. 13). This dynamic between species and 'race' finds its representation in Belyaev's novel.

Doctor Salvator's medical treatment of indigenous people, the hybridisation of Ichtiandr and parallel experiments on cross-animal hybridisation lead us to think about the relations between the categories of race and species. Salvator hybridized the Indian American boy Ichtiandr into an amphibian in order to save his life rather than to experiment on a racialized body. The fact that he kept the post-operational amphibious Ichtiandr under his personal protection and treated him as his own son can be explained by Ichtiandr's liminal status in society. Salvator could not return the boy with shark's gills to the boy's uncle who brought him to be saved. Strikingly, by becoming a human-animal hybrid Ichtiandr's ethnicity/'race' becomes a redundant category. While not articulated, categories of species and race appear to form a nexus in this sub-plot.

The situation in Salvator's laboratory and walled garden evokes the dynamic between categories of race and species. The secure garden is called the Garden of Wonders and it contains hybridised animals cared for by African American attendants. Notably, the garden's hybridised animals are described through the perception of an indigenous American man, Christo:

> Strange reddish-yellow animals with dark spots were running at him, barking and roaring at the same time. Had Christo met them in the pampas he would have recognized them as jaguars. But these animals were barking like dogs. […] Another Negro appeared and hissed at the dogs, like an angry cobra. They instantly calmed down. They stopped barking, settled down on the ground, and rested their head on their outstretched paws, casting an occasional glance at the man who subdued them. (Belyaev, p. 29)

> […] a large, completely hairless, pink dog. On its back, seemingly growing out of the dog's body, was a small monkey—its chest, hands, and head. The dog walked up to Christo and wagged its tail. The monkey looked around, waved its arms, patted the back of the dog, with which it was merged and shouted, looking at Christo. (Belyaev, p. 30)

In this man-created variant of the Biblical Garden of Eden, strict species boundaries are dismantled. What looks to be threatening for humans on the basis of the animals' appearance turns out to be devoid of danger. Rather the territory exemplifies a life of peaceful coexistence of the new hybridized animals to which no set categories can be applied. Yet in contrast to this idyll of hybridized life, human constructs of race prevail. Notably, the African American man is called Negro by an indigenous Christo who continues to think in categories which, by the implied logic of the text, should

no longer be applicable in the man-created utopian habitat. The text suggests that it is the colonial setting that makes humans think in racialist categories. Readers can make a connection between racism and speciesism (Singer 1990) and see hybridism as a way forward to dismantle set categories.

After its publication Belyaev wrote an "Afterword to the novel *The Amphibian Man*" (1928) in which he claimed that there was a court case against a doctor in Argentina in 1926 who operated on Native American children in order to adjust their bodies for a contemporary life style. Notably, the Garden of Wonders in the novel has Native American children present but they are not being experimented on. Rather in line with Belyaev depicting Doctor Salvator as a benevolent person who heals children free of charge, these children spend time in the garden as if it is a perfect natural environment for them. Belyaev explicitly promotes scientific and medical experimentation in the "Afterword to the novel" and this sheds light on his decision not to create a fictional narrative of an evil scientist. Doctor Salvator in the novel does not commit acts that are *presented* as unethical in relation to 'race' and ethnicity. Belyaev ends the "Afterword" with an optimistic vision of scientific endeavour that will bring improvements in near future with man daring to interfere with what is seen as God's domain and the domain of Nature.

While the novel depicts colonial society with its racialist reality Belyaev does not present Doctor Salvator's experiments in a racialist light. Even in the "Afterword" he notes that native children "adored" the alleged historical Salvator (Belyaev, 1928, p. 200). The writer also states that 'historical' Salvator did not experiment on animals, and that cross-species hybridism is Belyaev's own invention, albeit inspired by the success of the real-life Salvator's surgical operations on humans as well as by other scientific operations involving human and animal organs and tissues performed in the twentieth century. In my research I was not able to substantiate Belyaev's claim on an Argentinian Salvator's experiments. There indeed was a famous medical doctor in Argentina in 1920s, Salvador Mazza whose main achievements are in bacteriology and the treatment of indigenous children (Leonard 1992) but he was never put on trial. The accuracy of Belyaev's claim remains unclarified by other commentators on the novel (Krementsov, Serada, 2021). The claim can be explained by Belyaev's expressed quest to bridge the gap between life and science. For Belyaev, Salvator's treatment of native children does not present an ethical problem.

The fact that Belyaev-invented hybridized animals coexist peacefully among themselves and with humans implies that Doctor Salvator created a habitat that the Scriptures envisioned as an ideal future. As a Christian seminary student in his early years, Belyaev would have been familiar with the Biblical passage related to the post-Messianic world-order: "And the wolf will dwell with the lamb" / And

the leopard will lie down with the young goat/ And the calf and the young lion and the fatling together/ And a little boy will lead them" (Isaiah 11:6). While the Biblical paradise preserves animal and human species it transforms their instincts and physiological needs into an ethically benign vegetarian life-style. In Belyaev's novel this co-existence is achieved scientifically by removing cross-species boundaries. Native American children in the Garden of Wonders appear to fit well into a peaceful habitat with modified animals that are no longer dangerous or carnivorous because they have been hybridised. This presence of indigenous children in the transformed animal habitat both conforms to and re-writes the European colonial narratives of natives as children of nature. Since nature presented by animals has been modified and children have not, it appears that there is no place for racialism and other set categories in Salvator's domain. Instead, Belyaev's text suggests an analogy of colonial and religious authorities' phobia of cross-species hybrids and their determination to preserve racial/ethnic hierarchies as pillars of society.

Belyaev's choice of a tropical walled Garden as a place of successful experimentation echoes the isolated island of Well's *Doctor Moreau.* While familiar with this novel, Belyaev offers a story of peaceful co-existence in this protected space. Significantly, in *Moreau* the jungle never becomes a garden (Glendening 2022, p. 585) but rather remains a locus of beasts and bestiality with the Beast Folk regressing to the animal state. Moreau fails to change an animal's character through amputation, grafting and transfusion and ends up killed by the hybrid Leopard-man. Belyaev intentionally guards the ethical bounds of Salvator's cross-species experimentation without allowing him to produce human-animal 'monsters'.

ON NATURAL/UNNATURAL PROCREATION: CAN HUMAN-ANIMAL HYBRIDS HAVE A LOVE LIFE?

Examining bioethical issues around developing biotechnologies related to cross-species reproductive material Robert and Beylis raise a question about the perception of natural and non-natural procreation. They register an argument around "reproductive isolation" (Robert & Beylis, 2003, p. 3), according to which if two populations of creatures do not successfully interbreed, they belong to different species. The authors propose cultural prohibitions on human-animal sexual contact as a plausible "thin explanation" (Robert & Beylis, 2003, p. 7) for a repulsive attitude to biotechnological mixing of human and animal reproductive material. Notably, in both *The Amphibian Man* and "A Dog's Heart" the two human-animal male hybrids do not have sexual contact with humans or animals. In the following discussion I explore plausible reasons for these authorial choices.

The Amphibian Man's resounding success is due to the fact that it is not only a speculative fiction genre but also an adventure story. As such its plot incorporates a love romance. Ichtiandr is romantically attracted to the daughter of a Native American sailor Balthasar who works on the ship as a second-in-command to the capitalist boss. The young beauty is also an object of the capitalist-boss's attention. This element of sexual jealousy suggests that in his all-human appearance the young and handsome Ichtiandr is a worthy rival. Yet both in the text and in the film adaptation of 1961 the romance between Ichtiandr and a beautiful Guttiere does not culminate in a sexual relationship. The logic of the text suggest that Ichtiandr could have been a lost son of Balthazar, Guttiere's father. This would make Ichtiandr and Guttiere siblings. The film however changes the scheme of kinship. Ichtiandr becomes Doctor Salvator's biological son and a European, while Guttiere remains Balthazar's daughter and a Native American. In spite of the emphasis on romance in the film adaptation, both texts avoid the consummation of this love relationship in a sexual encounter.

While Robert and Beylis consider cultural taboos on human-animal sexual contacts as an explanation for moral issues regarding mixing of human and animal reproductive material, in Belyaev's novel, I suggest, cultural prohibition on sibling sexual contacts serves as a concealed moral factor. Anthropologist Mary Douglas in her *Leviticus as Literature* views prohibitions in Leviticus and Deuteronomy on the mixing of biological materials, both plant and animal, as well as prohibitions on sexual contacts between humans and animals, as the main source of anxiety around the crossing of conceptual boundaries, including those between species. Significantly, prohibitions on sibling incest are similarly stated as an abomination. While *The Amphibian Man* does not overtly articulate the link between transgressing incest and engaging in cross-species sex the reader is left to make this hermeneutical connection in order to understand this romantic relationship. It appears that in the novel the incest taboo criss-crosses with the prohibition on cross-species sexual contacts in line with the categories in Leviticus.

It has to be noted that the sexual culture in the Soviet 1920s was far from prudish. The early 1920s were characterised by an open liberational public discourse around matters of sexuality. Social taboos on extra-marital and pre-marital sex among others were broken by early Soviet ideology (Naiman, 2019). Medical literature on the subject advocated the breaking down of the norms of repressive sexual behaviour. Belyaev's choice to leave his amphibian character 'virginal' suggests more than the innocence of the hybrid being. In the film adaptation of *The Amphibian Man* the new Soviet prudishness of the 1960s can serve as an explanation to the two young 'persons' not entering into a pre-marital sexual relationship. Clearly this biological hybrid embodies tension around sexuality and procreation which both the writer and the film director dealt with by leaving it unresolved.

Notably the film introduces a cross-racial topic by making Ichtiandr a European while Guttiere is a Native American. Matters of cross-racial colonial cultural taboos amplify the issues of biopolitics in this adaptation in line with the international political agenda of the Soviet Union in the early 1960s with the country's open support of anticolonial movements in South America and Africa. In the historical context issues of bioethics and biopower embedded in cross-racial relations become topical. While the film adaptation polemically presents the notion of cross-racial romance as a construct of culture rather than biology, it avoids classification of cross-species sexual relations. This situation relates to the issue of natural and non-natural procreation since children of cross-racial marriages are born naturally while cross-species hybrids are not. Notably, this particular point of difference in procreation was made in a response to Robert and Beylis' article (Wasserman, 2003, p. 13).

In Bulgakov's "A Dog's Heart" human-dog hybrid Sharikov is expressly sexual. One of the reasons why Professor Preobrazhensky decides to revert him back to the dog Sharik is Sharikov's excessive lust and unrestrained advances towards young women. The reader is left to ponder whether this heightened sexual drive is the result of Preobrazhensky's implanting male testes into the dog or a mixture of canine and human reproductive secretions. The mixture of human-to-animal reproductive material is a kind of experiment that Robert and Beylis refer to in relation to moral objections around contemporary biotechnologies in cross-species hybrids and chimeras. Ironically, transplantation of monkey glands to humans as a rejuvenation procedure was practised in the 1920s (Krementsov, 2013, p. 139). Preobrazhensky routinely performs this operation on his rich male and female patients. In the case of the reverse donor operation, human material to animal, the unexpected happens resulting in a debauched human hybrid. The unplanned oversexed hybrid is a result of the simultaneous insertion of human testes and hypophysis that lead to uncontrollable endocrinal hormonal changes. Bulgakov uses a satirical plot to show the results of experiments that use 'sex' glands and made Preobrazhensky correct the outcome by *de facto* destroying the overpowering human-like hybrid.

In order to fully understand concerns around human-like hybrids' sexuality it is relevant to recall that Shelley's Frankenstein and his Creature were in a deadly struggle over Frankenstein's refusal to create a bride for the Creature to avoid the hybrids' procreation and the proliferation of a potential new breed. We can guess from Sharikov's sexual drive that he is capable of producing progeny.[7] It is plausible that Preobrazhensky's decision to destroy the hybrid is partly motivated by the same fear of progeny out of human control as that of his literary predecessor, Dr.

[7] Golovacheva (2022, p. 66) sees in this motif echoes of the idea (not popular in the Soviet Union) of sterilizing inborn criminals as part of a eugenics programme.

Frankenstein. This fear is well-founded as the hybrids in *Frankenstein* and "A Dog's Heart" are physically stronger and more cunning than their creators. Fear is a strong formative factor in negative attitudes to human-animal hybridism (Robert & Beylis). Conscious and unconscious fear of hybrids incudes fear of their potential progeny.

THE ROLE OF CULTURE-SPECIFIC ISSUES AND CHARISMATIC SPECIES: WHY DOGS?

In his article on ethical paradoxes in human-animal hybrids and chimeras written partly in response to Robert and Beylis' article, D. Hubner makes an important statement explaining the moral confusion around species boundaries: "Human–animal mixtures, depending on their concrete set-up, may have considerable or even full moral status. At the same time, they tend to undermine the cogency of an essential type of argument that bestows that very status on them in the first place" (Hubner, 2018, p. 188). This line of reasoning encourages us to think further about the choice of dogs in Bulgakov's and Belyaev's stories. I propose that in order to fully understand the "concrete set-up" (Hubner p, 188) that bestows moral status on some hybrids we have to take culture-specific beliefs into account. Historical explanations as to why dogs received representation in fiction of the time are well-noted: Pavlov's laboratory experiments and reanimation experiments conducted on dog's heads in Sergei Briukhonenko's laboratory were imprinted in popular imagination (Krementsov, 2013; Mondry, 2015; Fratto, 2021). It is also known that both Bulgakov and Belyaev were familiar with these experiments (Krementsov, 2013).

Dogs are the result of human genetic engineering after the initial process of domestication of grey wolves in Europe some 30,000 years ago after which "symbiosis was established between humans and dogs" (Shapiro 2015, p. 102). Dogs thus embody a cluster of bioethical issues around hybridity as a 'species' with multiple identities. While they embody these issues, they also dismantle them. In terms of shapes, sizes, purposes, abilities, tasks and duties they present a unique case of fluidity that scientifically can be achieved only by hybridisation. Yet they also stand as a product of nature with some 85% of the planet's dogs sharing a similar appearance (Coppinger & Coppinger, 2016), although they can interbreed with other genetically modified dogs and other species. These features of dogs as 'species' and quasi-species explain why Bulgakov and Belyaev chose them for their hybridisation experiments. In addition, there are also cultural beliefs around dogs that play a role.

In a well-known book *What is a Dog?* (2016) biologists and science writers Raymond and Lorna Coppingers make a point about cultural issues and refer to the treatment of street dogs in Istanbul. They base their opinion on research conducted regarding

tolerance of these feral and stray dogs on one hand, and issues of biopower when it comes to government culling sick dogs at the time of an epidemic. The Coppingers formulate their interlocutors' answer as "We can't [kill them]. The dogs belong to God" (Coppinger & Coppinger, 2016, p. 36). This example demonstrates that any bioethical arguments related to animals or animal hybridisation reflect the status of species in a given culture. As far as Russian traditional cultural beliefs are concerned, dog-human parallelism has been noted and studied by cultural historians. A number of proverbs and sayings reflect this state of thinking (Uspenskii, 1988).

Notably for scientific experiments related to enhanced longevity of humans, dogs have a special status in traditional Russian culture in relation to reincarnation. One proverb states: "Do not beat a dog, it was human once" (Uspenskii, 1988, p. 250). It is not by accident that Bulgakov chose a dog for human organ transplants as traditional culture presupposes this interspecies compatibility (Mondry, 2015). These beliefs influence bioethical considerations in human-animal hybridism experiments. Thus, in Belyaev's Garden of Wonders, hybridised wild animals benefit from a significant presence of a canine component. A hybrid of a monkey riding a dog is particularly notable in terms of the history of Darwinian gradation of dogs as moral animals in comparison to monkeys (Todes). Dogs as humanised animals presuppose a spiritual and moral quasi-hybridity with humans.

To further demonstrate the role of cultural beliefs in relation to scientific transformation a poem from the 1910's decade makes a relevant example and a point of comparison to 1920s fiction. Futurist poet Vladimir Mayakovsky in "How I became a dog" (1915) rivetingly offers his own liver as a transplant to save an undernourished dog. The poem is a transformation narrative that reflects both traditional beliefs about human-dog correlation and at the same time the scientific reality of cross-species organ transplants. While underpinned by Mayakovsky's programmatic trust in society's futurity that conquers death, the poem includes 'man's best friend' in this future. The poem reverses the donor and the recipient of organ transplants making it a distinctly non-anthropocentric text. Paradoxically, the poet achieves transformation into a dog not through scientific experiment but through his own volition. He grows a tail and ends up on his four paws. This transformation into a non-human animal can be viewed as a challenge to the Christian notion of divine transfiguration, an atheistic anti-religious gesture of an Avant-garde poet set to dismantle boundaries between species. The poem reflects bioethical thinking on equality of species, but at the same time the choice of dog suggests the incorporation of culture-specific mythopoetic beliefs.

As Haraway points out in her influential *When Species Meet*, reciprocal symbiotic human-canine interaction is "a knot of species co-shaping each other" (Haraway,

2008, p. 42).[8] Dogs' co-evolution with humans underpins cultural beliefs and explains why this "concrete set-up" (Hubner, p. 188) endows part-dog hybrids with moral status. Ironically, the satirical set-up in Bulgakov's "A Dog's Heart" undermines moral status of the *human* essence of the dog-human hybrid. Striking and, I argue, symptomatic in relation to eugenics is the Professor choosing canine material to "improve human nature" and intellect. The dog Sharik, reverted to his canine essence, shares a privileged life in the microcosm of the lavish apartment – the space from which the debauched hybrid Sharikov had to be evicted. Canine co-evolutionary intelligence manifests itself in Sharik's ability to have himself adopted by this wealthy household. A historically and culturally tested symbiotic relationship between humans and dogs proves to be safer for Preobrazhensky than co-existence with genetically-faulty hybridized (and classed) Other.

THE AMPHIBIAN MAN: BIOETHICS IN FISH AND HUMAN HYBRIDISM

The amphibian man Ichtiandr, on the other hand, presents a different case of hybridism with respect to issues of human-animal co-evolution. With the transplant of gills taken from a young shark, this human remains unchanged in shape and appearance. In spite of the limitations of how long he can spend under water and on the surface, his implant coexists with his weak human lungs and makes him superior to other humans. As he does not challenge the species identity visually, he does not fall into a category of monstrosity. Sharks not being treated as a charismatic species further contributes to the low level of secular bioethical concerns around Ichtiandr's hybridity. It is mainly the Catholic clergy that raises the issue of the unnaturalness of this being and the situation allows Belyaev to politicise the narrative.

Fish are not universally classified as sentient beings (Medaas et al, 2021). While today some countries legally recognise fish as a sentient lifeform and have welfare legislations based on the premises that fish are capable of suffering, this was not the case in the 1920s. Recent research on ethics and fish shows that humans do not empathise with fish because fish are phylogenetically too distant from humans. We cannot hear them vocalise and they lack recognisable facial expressions, both of which are primary cues for human empathy (Brown, 2015). Current research around Flagship species and conservation in relation to sharks demonstrates that it is difficult to raise financial donor support and awareness around extinction because sharks are perceived as a dangerous uncharismatic species (Curtin & Papworth, 2018). This lack of empathy

[8] For relevance of Haraway's work for Bulgakov's story, especially in relation to her ideas on the alliance between the scientist and laboratory animals, see Kaminski (2023, p. 84).

among the general public results in slow legislative progress as governments typically respond to issues of bioethics under the pressure of public opinion.

Research on fish welfare shows that this topic often leads to discussion of the economic interests of commercial fishing (Evans, 2009). Matters of bioethics are intertwined with issues of business ethics. Notably in Belyaev's text the amphibian man Ichtiandr is caught up in a situation where he ends up in the hands of a ruthless capitalist who exploits him for the financial gains. The issue of bioethics is surpassed by the issue of unethical exploitation of labour in a capitalist society. Ichtiandr's ability to dive at the deepest levels of the ocean makes him an excellent pearl gatherer, and he is kept in captivity by the owner of the ship that exploits the brigade of all-Native American pearl-divers. Notably, this commercial exploitation of the sea features in Doctor Salvator's speech during the court trial. He explains that in spite of his ability to do so, he does not want to create more amphibious human-fish hybrids because they would be made to perform unethical tasks in the marine environment.

In the novel Ichtiandr becomes victim of unfair business practices. He is mistreated by the cruel ship owner and by the prison wardens who force him to stay in a container with polluted water for too long. This leads to the atrophy of his human lungs leaving him only the shark's gills. The physiology of his hybridism is changed. Doctor Salvator cannot at this stage save his human/amphibian life, and while in physical appearance Ichtiandr remains human, his human species identity is shattered by the damage to his vital organs, that is, his lungs. His immediate future is restricted only to an aquatic existence. Temporarily, Ichtiandr has to lead the life of a fish wearing a tight-fitting suit made of artificial fish scales. Salvator works out a safe route for him to swim to the South Pacific where he will be looked after by Salvator's old friends living on an isolated island. In this fish-like existence he becomes as vulnerable as fish themselves. Becoming-fish and sharing dangers with these species can arguably be seen as a compensation for the speciesism of using shark's gills to save human life. Yet there is an optimistic prospect of Ichtiandr's reversal to amphibious human life on Salvator's return from prison. Fish existence is clearly seen as undesirable and unsuitable for a predominantly human hybrid.

Using fish gills as a donor organ embodies a paradox in the novel. On one hand Belyaev in his "Afterword to the novel" and Salvator in the novel explain that gills are compatible for humans because human embryo goes through a temporary stage of developing gills – a feature that parallels evolution of species. On the other hand, Salvator views fish as distant species to humans and this evolutionary distance presents a challenge that he overcomes in his surgical experiment on cross-species hybridity. It appears that fish are ancillary in relation to human well-being. The novel intuits speciesism in relation to fish and for this reason chooses an uncharismatic

species, the shark. However, it does not resolve issues of bioethics in relation to fish welfare which corresponds to our contemporary situation.

By the multidirectional logic of this text, Ichtiandr's vital hybridity is destroyed by capitalist exploitation of aquatic resources and of working labour as well as by the Catholic church's ideological assault on him resulting in his incarceration. In this politically polemical text matters of bioethics are firmly set in societal structures, and are shown to be intrinsically linked to prevailing religious ideologies and business practices.

CONCLUSION

The fictional narratives analysed here not only confirm the view that science and speculative fiction develop in parallel ways but also demonstrate a stable continuity in matters of bioethics in relation to cross-species hybridism and species transformation. The very fact that it is possible to isolate and formulate these issues on the basis of literary texts of the 1920s in relation to contemporary bioethical debates proves this continuity in matters of "the moral confusion" (Robert and Beylis, 2003, p. 10). Yet fiction by the very nature of its polyphonic logic brings together isolated themes and creates thematic clusters and criss-crossing categories. Without necessarily resolving problems in a systematic way fictional narratives prepare us for the complexity and intertwining connections in cross-species relations, correlations and hybridism. These creative texts use SF/adventure plots to raise a complex of bioethical topics ranging from science and medical experimentation, ontological and biological aspects of species identities, and the dynamics between cultural and biological constructs and culture-specific beliefs in relation to charismatic species.

Fictional narratives can incorporate and synthesise various ethical intersections, including speciesism, racism and social class prejudices. The two stories address intertwining "ethical paradoxes" (Hubner, 2018, p. 188) that underpin the moral core of social and biological categories by applying them to human-animal and cross-species hybridism. For literary texts the state of "moral confusion" and non-Euclidean paradoxical thinking is a normative feature of being-human.

Bulgakov's and Belyaev's stories both expose and compensate for the lack of public debate in the Soviet Union over ethical concerns around the rapid advances of experimental biology and medicine in the 1920s. In both narratives most experiments are conducted in order to improve human longevity and vitality. Experiments on animals similarly result in the creation of hybrids that are more conducive for co-existence with humans. While writers address issues of bioethics on many levels, the prevailing pathos of these stories centres around the role of humans in building

futurity. Environment and nature in Belyaev's text are to be changed and used non-exploitatively for the betterment of life.

These fictional texts prove that in issues of bioethics there is a pronounced difference between charismatic and distant species. Notably, the welfare of phylogenetically distant species like fish does not raise bioethical concerns but rather provides the author with an opportunity to criticize the creationist model in species identity. This situation is in line with our contemporary speciesism in debates and practices in fish welfare and protection of uncharismatic Flagship species like sharks. Bulgakov's story presents an overt example of bioethical privileging of charismatic species. It is for this reason that the human-dog hybrid is surgically reverted to a dog in Bulgakov's story. This operation is a form of moral justice in relation to experiments on these species in the 1920s. The dog-monkey hybrid in Belyaev's Garden of Wonders reflects historical facts that in the 1920s most experiments on organ transplants were conducted on these two species. Both Bulgakov and Belyaev treat dogs as moral beings following both the Darwinian and traditional cultural attitudes to this paradoxical species. This situation in fiction echoes Robert and Beylis' point that our moral obligation towards part non-human animal hybrids is related to our moral obligation to a particular and exclusionary range of non-human species.

Thinking in terms of culture-specific categories, it is noteworthy that Belyaev's story explores the role of mythopoetic thinking in the perception of human-animal hybrids by indigenous Americans. Their syncretistic world-view makes it possible for them to perceive the amphibian man as a sea-god, and even to view Doctor Salvator as a god who came to heal them and take care of their ailments. African Americans also feel comfortable in the Garden of animal hybrids. These fictional narratives remind us that when thinking about categories of species in relation to bioethics we cannot rely on universal categories but should take culture-specific beliefs into account.

While Bulgakov's story avoids thematising the role of institutional religious authorities, Belyaev's novel exposes the role of the Catholic Church in imposing Christian doctrines on the indigenous population. For the clergy Ichtiandr is not only a product of sacrilegious human hubris, but also an embodiment of non-Christian 'paganism', his composite name of Greek origin connoting pre-Christian pagan beliefs. The Church here is not a moral authority but a self-serving colonial biopower.

While the two texts offer different attitudes to the creationist model in relation to hybridism, they nevertheless demonstrate subterranean fears and anxieties of the consequences of drastic scientific and medical experiments. Bulgakov rightly calls for the need to consider the unknowable genetic characteristics of the donor material. While Bulgakov's text shows unforeseen results of an experiment, even a well-intended

humanitarian medical experiment has dramatic outcomes for the hybridised human in Belyaev's *The Amphibian Man* (albeit resultant from the faults of capitalist society).

Authorial subjectivities play an important role not only in the attitude to experimentation but also in teaching us that bioethical issues must be attended to both on individual and collective levels. Bulgakov's scepticism is related to his professional medical education and is linked to such biographical facts as his being the son of a theology professor. Belyaev's study at the Christian seminary, then dropping out to become a lawyer, provided him with a knowledge of the Scriptures and arguments related to issues around man interfering with God's creations. Notably, being a lawyer made him address the role of dominant religious institutions in legal proceedings. Additionally, Belyaev's optimistic and proactive attitude to human endeavour can be explained by his own physical disability: being crippled from an early age he justifiably dreamed of radical treatments that border on the fantastic. For him man playing God was a way to find motivation to cope with physical impairment.

These two fictional texts break boundaries between science fiction, adventure, pastiche and political and social satire in parallel to intertwining complexities of bioethical and (bio)political side of human-animal and non-human animal hybrid discourse. Whether on the surface layer of the plot or on the levels of context and subtext these speculative narratives cover a wide-ranging scope of relevant domains: the role of political system, colonial biopower and bio-law in discourses around transformation of species that still form a core of our contemporary posthuman debates.

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Hibridi različitih vrsta i bioetika u ranoj sovjetskoj beletristici

SAŽETAK

U članku se bavim bioetičkim pitanjima hibridizacije različitih vrsta u poznatom radu „Crossing species boundaries" („Prijelaz granica između vrsta") (2003.) Roberta i Beylisa i raspravom koja iz toga proizlazi analizirajući dvije važne priče napisane 1920-ih godina u Sovjetskom Savezu, „Pseće srce" i „Čovjek vodozemac". Tvrdim da ove dvije izmišljene priče dokazuju da književnost ne odgovara samo na mijenjanje trendova u biološkim znanostima, već heuristički i intuitivno razmatra šire društvene posljedice radikalnog eksperimentiranja. Pristup u procesu dokazivanja da oba teksta, unatoč činjenici da su ukorijenjeni u reformacijskoj atmosferi 1920-ih, predstavljaju različite odgovore na problematiku hibridizacije različitih veza koji su relevantni u današnjim debatama, istovremeno je sinkronijski i dijakronijski. Posebice se bavim idejom da čovjek glumi Boga, identitetom vrsta kao analogijom za rasu i stvaranjem ljudsko-životinjskih hibrida. Također se bavim relevantnošću koncepata specifičnih za određenu kulturu i udaljenih vrsta za raspravu o različitim vrstama.

Ključne riječi: ljudsko-životinjska hibridizacija, identitet vrste, bioetika i eksperimenti sovjetske beletristike i znanosti.