

# NORTH KOREA'S GREY HUDDLE: A REVERSE PERSPECTIVE OF ITS ANALOG MILITARY

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*Defense reform has been the keyword for South Korea's military strategy for over 20 years and recently the country upgraded its strategic defense plan with the new name 'Defense Innovation 4.0' under the Yoon Suk-yeol administration. The core logic behind the reform is smaller but stronger manpower through technical advancement. However, there have been unprecedented drawbacks of fully automated weapon systems revealed in public recently and the fathers of Artificial Intelligence have warned about their errors against mankind. On the other hand, technically disadvantaged adversaries, especially North Korea, have honed their defense strategy with their old-fashioned analog military for decades. This issue brief analyzes the gap between the two sides—technically advanced and technically disadvantaged—in order to refine our technical prowess towards the right direction with minimal reform.*

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## Introduction

Artificial Intelligence (AI) and Machine Learning (ML) are words we often hear along with quantum technology and robotics. We are also aware that such tech-savvy mechanisms have not yet reached the hermit kingdom of North Korea. North Korean escapees a few years ago reported new technologies like electronic charging stations for electronic vehicles<sup>1</sup> and the use of China-made smartphones<sup>2</sup> but such developments are far slower than in other developed countries, including North Korea's main rival, South Korea.

We think of these slow-paced developments as North Korea's disadvantages and we believe we have superiority over North Korea based on the power of technical advancement but one must think twice and carefully calculate whether this could be a new *Grey Huddle* for those technically advanced countries in reverse perspective. Many of North Korea's conventional military assets are still Soviet era technologies.<sup>3</sup> Over decades, Pyongyang has spent most of its budgets on building asymmetrical capabilities<sup>4</sup> like nuclear weapons and delivery vehicles: ICBM,<sup>5</sup> SLCM.<sup>6</sup> Therefore, many of their conventional military

weapons remain old technologies. The Center for Strategic and International Studies' North Korea's Cyber Operations report in 2015 also claimed, "North Korean strategy emphasizes asymmetric and irregular operations in both peacetime and wartime to counter the conventional military strength of the U.S. and ROK,"<sup>7</sup> which shows that their special attention on asymmetric capabilities over conventional forces resulted in hoary munitions.

### **The Definition of Grey Huddle, and Against North Korea**

In order to understand whether the technically stalemated country or so-called analog state is a threat or not, it is hard not to use a perspicuous example for general understanding. Nowadays, many automobiles are equipped with high-tech 'adaptive headlights' that help drivers to spot other incoming and nearby vehicles easily at night. This has become a widely adopted practice among automakers since 2006 when the U.S. automotive regulator National Highway Traffic Safety Administration officially approved<sup>8</sup> 'adaptive headlights' for common vehicles. Since then, most vehicles after 2006 would have an automatic feature that turns on their headlights when the surroundings get dark, even if the driver forgot to turn their lights on.

However, vehicles built before 2006 might not have adaptive headlights and the driver must manually turn the lights on. Occasionally, we encounter these no-headlights-on vehicles because the drivers might have forgotten to turn their lights on. Imagine we meet them in the middle of the intersection on a dark night. These lights-turned-off vehicles are hard to spot in traffic and become dangerous for other innocent lights-on drivers. This simple example gives you a general idea of how analog technology can be a threat to other technically advanced groups. We call such differences between groups or areas "a gap" in modern terms and many experts in the field of 'smart technology' have pointed out how we need to overcome a gap<sup>9</sup> with various steps but such a gap in North Korea has no solution from the

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outsiders. This gap in North Korea is what I call and define as a "*Grey Huddle*."

Based on this idea, we must appraise the advantages of low-tech weapon systems thoroughly. North Korea's analog Soviet-era weapon systems are designed to carry out one simple function, 'kill the target' under raucous battle conditions, while our technically advanced countries' assets are designed for more than one function and are interconnected to various other systems in different locations. These multi-functions often interrupt the simple mission by information overload—à la our smartphones are no longer restricted to calling and have so many other functions that distract us in our daily life.

If we apply this sense to North Korea, the apparatus of war boggles our minds, and we need to prepare for the *Grey Huddle*. In this mechanism, a war against North Korea is not just a hybrid warfare<sup>10</sup> but a *Grey Huddle* or gap that we created on our own. This huddle has grown over decades—North Korea spent its budget mostly on asymmetrical power while the U.S. and its like-minded allies including Seoul and Tokyo spent their annual fiscal

to modernize their conventional forces, and have enabled their C4ISRT<sup>11</sup> systems in the name of interoperability and integrity. As the gap between the two, Pyongyang versus technically advanced coalition forces, increases, the bigger the *Grey Huddle* will be.

## Advantages of Analog and Disadvantages of Digital

There are two major disadvantages of digital: A short period of testing time on their technology and the fallacy of the new inventions. First, technical advancement is a must and Luddites have no ground against fast-paced innovation in modern times but the warp speed of amelioration often leaves fallacies behind in its path that require careful review in the long run. Much time and money was spent<sup>12</sup> on the symbol of coalition forces' breakthrough, Lockheed Martin's 5<sup>th</sup> generation fighter, the F-35 program. It exceeded all initial plans and such a similar delay is again seen in Boeing's advanced pilot trainer, T-7 program.<sup>13</sup> These examples are not limited to modern military jets and do not disgrace the name of the U.S. defense companies that produced unrivaled air superiority over enemies in the past but only accentuate how difficult it is to make technical headway lately. The testing phase of

these latest weapons is often shortened because the government-requested procurement deadline is set to a certain period. Many modern weapon systems have passed the Required Operational Capability (ROC) with conditional passes and limited budgets that sometimes expose their vulnerability to the public—South Korea's new advanced missile system, Hyunmoo-2C crashed in 2022 for the same reason.<sup>14</sup>

Second, these new inventions are fragile on their own from birth because it has no former ground to study and compare. Some of these innovative inventions have only a limited number of precedents, so unseen problems will arise as time goes on. One common example is the reusable rocket system, the Falcon series. This new technology by SpaceX failed multiple times<sup>15</sup> before getting it right. From a military perspective, such trial-and-error fixing moments are limited and the very best place to test them would be on the battlefield. It is argued, only battle-proven systems can be seen as near-perfect.

## Learning from Past Digital Fallacies

For instance, North Korean soldiers are naturally unconnected to any form of high-tech C4ISRT grid but they are still able to communicate through World War II style trench pull strings, and tele-hotlines to commanding chambers through simple, underground cables.<sup>16</sup> On their part, South Korean and U.S. forces are linked to various C4ISRT datalinks: Link-11, Link-16, and even commercially available telecommunication network including Voice over IP (i.e., KakaoTalk). Since 2020, all South Korean forces are enabled with smartphones<sup>17</sup> so that all soldiers are on the C4ISRT grid. Unlike the U.S. forces, before 2020, South Korean soldiers ranked under non-commissioned officers (NCOs) were not allowed to use smartphones.

Any form of digital network is not a silver bullet and anything digital leaves some signature behind bearing downsides and always carries the possibility of an electromagnetic-caused shutdown. Shutdowns

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could happen by force majeure of nature and artificial causes like EMP weapons and nobody knows how long such shutdowns will last on the battlefield, while analog systems are less vulnerable to such conditions; North Korean soldiers are accustomed to a 'do it yourself (DIY, 자력갱생)'<sup>18</sup> mindset. Technically advanced groups are unable to perform their operations because most of them rely on digital systems. This is why the E-4B Doomsday Plane, which is designed to operate under nuclear and EMP attacks, is made of analog systems<sup>19</sup> because it is less susceptible to electromagnetic influence.

Any battle requires resupply for armament yet such a chain of logistics<sup>20</sup> is not guaranteed in any strife and now technically advanced groups desperately need more sources than underdeveloped groups. In such isolated settings, the technically disadvantaged group has higher survivability due to its simpler systems that can be promptly adjusted. The one-man marking structure of the advanced group is another pernicious weakness. If the one who operates the high-tech systems dies or is injured during the fight, there is no substitution for that particular role, while the underdeveloped group can easily find a substitute for that role. This issue came up when Ukraine Air Force pilots used to Soviet-era jets took at least six to nine months<sup>21</sup> of training to fly F-16 fighters. Analog's simplicity guarantees better survivability in the battle.

In December 2022, when South Korea's ubiquitous network Kakao server shut down<sup>22</sup> due to an unexpected fire accident, the public was impacted by it for weeks and proved how societies are impuissant to digital service. The shutdown halted telecommunication, restaurants, and transportation systems. In 2010, when North Korea mortar-shelled<sup>23</sup> the South Korean island, Yeonpyeong (commonly referred to as YP-do). It was a surprise attack that exposed South Korea's K-9 howitzers, which were designed by South Korea's Agency for Defense Development (ADD) and sold to various countries including Poland, Turkey, and Norway.

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North Korea shot about 140 rounds at the South and nearly half of the shells landed at the seaside, South Korea responded with about 80 rounds<sup>24</sup> but 35 of them landed in the sea. K-9's inferior target-hitting rate despite digital aiming caused South Korean congressman Kim Moo Sung to besmirch<sup>25</sup> the South Korean Ministry of National Defense. Comparably, North Korea hurled multiple Soviet-era-built surface-to-surface weapons: BM-24, BM-11, and ZiS-3. This then, South Korea to recalibrate and upgraded the K-9's digital aiming system.

During the dire fight between the two Koreas, South Korean Marines had to comply with ongoing fire caused by the North's shelling, without properly extinguishing the fire during the battle could have delayed the response operation against the North, but another problem unexpectedly occurred because of the digital system. South Korean Marine Corps during the fight dispatched fire extinguishing vehicles yet stuck at its gate because of the power shutdown of igloo e-doors. Thankfully, the Marine operator crashed the e-door with a vehicle<sup>26</sup>. This showed that a digital e-door can affect the entire mission.

A similar digital fallacy can be seen in the United

States forces too, according to P.W. Singer's famed book, *Wired for War*,

*"...when I was touring the US Air Force's Middle East command center and the electricity went out. Even worse, the backup power generator didn't come on because, at that very moment, a breaker wasn't working. In the most high-tech military facility in the world, from which all unmanned operations in Iraq and Afghanistan are coordinated, airmen were finding way around with flashlights as they rushed to turn off the computers before their batteries died."*<sup>27</sup>

The author has said that any new technology should expect errors in the process of development, and this shows the imperfection of digital technology.

## The Colorful End: The 'Restomod' in the Military

This does not mean we should stop investing in new technology but rather we can tactfully fund duality in armaments. Restomod<sup>28</sup> is a new term in the automotive industry which means the revamp of old vehicles with modern technology so that they get the benefits of both worlds: Old and new. Washington and Seoul are planning to get rid of many of their 3<sup>rd</sup> or 4<sup>th</sup> generation military

jets<sup>29</sup> and related systems but such old technologies can be useful when it comes to dealing with underdeveloped analog enemies, namely North Korea.

Analog machinery can be destroyed or overhauled as restomod-military systems with better cost efficiency. One should not ignore the cost efficiency of older generation systems because many of them are war-proven systems that are durable and easy to use in any given condition—many of them have been through the stages of lessons learned from the battles, to remedy their faults. Moreover, the training time for operators is less than for the new complex systems. One great example of military restomod would be the development of unmanned F-16 variants,<sup>30</sup> this saves manpower and reduces the budgets of new manned and unmanned vehicles while keeping the mission-proven air superiority of F-16s against adversaries.

The Ukraine war made many military pundits rethink and change their beliefs on strategy. The Ukraine coalition forces with Saab-developed NLAW<sup>31</sup> proved that simple but battle-proven ancient hit-and-run tactics can destroy modern, 5<sup>th</sup>-generation Russian tanks. The long-standing war desperately needs manpower but any training on rookie soldiers takes too long to yield warriors because of the complicated new technologies. In the past, communist guerrillas could weaponize any teenager with AK-47s because of its simplicity and ease of tactics. Such simplicity is needed when we face unprecedented resistance, and our heavily tech-oriented military should accordingly be changed for the future.

South Korean veteran air force members are aware of how North Korea enhanced their analog advantage against digital systems by turning their radars on and off<sup>32</sup> simultaneously to counter or delay South Korean radar-homing missiles during the early phase of SEAD (Suppression of Enemy Air Defenses).<sup>33</sup> This 'analog' mindset is one which the Western hemisphere is not aware of.

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Eliminating the old weapon systems and solely relying on the new technology bears too big of a risk. The military should keep the old somewhere, so when needed, we can always revisit them for replacement or for backup—we are gradually witnessing hitherto unseen problems<sup>34</sup> with fully autonomous and electric vehicles, for example, but nobody has the chutzpah to say no to them at this very moment.

In early June, the US Air Force reported the killing of a human operator by an AI drone during a simulation exercise,<sup>35</sup> but later denied the incident claiming there was only a possibility of such a vulnerability. This reminds us of Facebook's forced shutdown of its AI chatbots in 2017<sup>36</sup> after two AI bots created their own language to communicate with one another amid researchers who were not able to understand their conversation. Technology is a savior of the future and development should not stop but careful delivery is a must, especially for the military which has to deal with life and death. The scrutiny of enemy capability by employing a technological gap analysis is a sine qua non too.

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