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Femicide and Rational Evaluation of the Evidence

By Jose L. Cusi Alanoca

Abstract- In this article, the author presents the characteristics and conceptual criteria that should identify a femicide according to the original conception of Femicide -or Feminicide- of the English term *Femicide*, first developed by the feminist Diana Russell. First, the author contrasts the original conceptualization of femicide and the technical definition proposed by the legislator in the Bolivian Penal Code on the classification of the crime of femicide and then makes a critical analysis of it. Second, he states that the concept of femicide -or feminicide- alludes to specific criteria, for example, the misogynist murder of a woman because of her gender, simply because she is a woman. Third, the author analyzes the mental state test and its conceptualization. Fourthly, he analyzes the systems of valuation of evidence. Likewise, he analyzes the system of sound criticism as a corrective criterion of justification of the judicial decision. Finally, he analyzes the evaluation of evidence and the evidential reasoning to which the independent and impartial judge or court must adjust.

Keywords: *men, femicide, mental states, valuation of evidence, sana critica system, mental states, femicide, evidence evaluation.*

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Femicide and Rational Evaluation of the Evidence

Femicidio y Valoración Racional de la Prueba

Jose L. Cusi Alanoca

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Keywords: men, femicide, mental states, valuation of evidence, sana critica system, mental states, femicide, evidence evaluation.

1. INTRODUCCIÓN

La igualdad de género según su desarrollo histórico tiene como *fin inmediato* acabar con la desigualdad “que existe” entre hombre y mujer. La lucha por la igualdad de género no es una reciente manifestación del movimiento feminista, ya que esta surgió en los años setenta, específicamente en 1975, en atención al discurso de la Organización de las Naciones Unidas (Colina Ramírez, 2019). Posteriormente, se fue fortaleciendo en diversas conferencias llevadas adelante por este organismo (México, Copenhagen, Nairobi y China). Ya en 1995, por vez primera, se aborda el concepto de género y la violencia contra las mujeres, como vulneración de los derechos humanos (Colina Ramírez, 2019).

La tipificación del tipo penal *femicidio* –o *feminicidio*–, como *política criminal* –*política pública*– demanda, ineludiblemente, un enfoque de género, es decir, “establecer con precisión la concurrencia de motivaciones asociadas al género” (Tuesta & Mujica,

2015). “Una tendencia, refiere Tuesta & Mujica (2015), punitiva –pero con enfoque de género– apareció entre los discursos sobre el feminicidio en América Latina”. Discurso que fue bien recibida e incluso aplica en la mayoría de las legislaciones de Latinoamérica.

A partir del 2013 en Bolivia, por razones que se desarrollaron en el año 2007 en la mayoría de los países de Latino América¹ se ha iniciado un proceso de tipificación de las muertes violentas de mujeres bajo la denominación de *femicidio* o *feminicidio*² (Ricaurte, 2022). *Femicidio* es una expresión que fue acuñada por la socióloga feminista Diana Russel, quien la presento por primera vez en 1976³ cuando testifico sobre este “crimen” en el *Tribunal Internacional de Crímenes Contra la Mujer* de Bruselas (Russell & Harnes, 2006, p. 76). Russel, según refiere Ricaurte, “definió al feminicidio como «the killing of women because they are women»” (Ricaurte, 2022). Quien además, en el año 1990, según refiere Ricaurte,⁴ manifestó que “el femicidio se aplica al «murder of women by men motivated by hatred, contempt, pleasure, or a sense of ownership of women»” (Ricaurte, 2022). La definición de Russel, según refiere Ricaurte, “ha sido ampliamente acogida por las legislaciones de América Latina en las tipificaciones del delito de *femicidio*” (Ricaurte, 2022).

Al respecto la tipificación del *femicidio* –o *feminicidio*– como la muerte violenta de las mujeres *por razones de género*, el Código Orgánico Integral Penal

¹ “En América Latina muchas de estas políticas fueron promovidas por gobiernos y sectores de la sociedad civil próximos a la izquierda política, generando consensos por encima de las orientaciones ideológicas. La tipificación del feminicidio es un claro Ejemplo” (Tuesta & Mujica, 2015)

² Ricaurte (2022), refiere que “Como se sabe los dos términos son usados tanto por la doctrina como por los códigos penales para denominar la muerte violenta de mujeres. Ambos términos proceden de la traducción al castellano del término inglés *femicide*”. El presente, no abordara el conflicto o discusión que puede haber sobre la aplicación del término, sin embargo, ambos aluden precisamente a la muerte violenta de las mujeres por razones de odio y desprecio por su condición de género, sin embargo, las matizaciones y características que se presentan en (Russell & Harnes, 2006) -Feminicidio: una perspectiva global- son también válidos. Por lado “Una propuesta de diferenciación de dichos términos y su justificación puede verse en: Lagarde, 2006a y 2006b”. (Ricaurte, 2022).

³ La expresión de Femicidio escuchada por Russell, por primera vez, data en el año 1974, quien bajo este denominativo pretende adecuar al asesinato misógino de mujeres. (Russell & Harnes, 2006, p. 76)

⁴ “La definición de Russel ha sido ampliamente acogida por las legislaciones de América Latina en las tipificaciones del delito de femicidio” (Ricaurte, 2022).

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del Ecuador - COIP, en su Artículo 141, refiere que la persona que «dé muerte a una mujer por el hecho de serlo o por su condición de género»; El Decreto Ley 22-2008 de Guatemala, en su Artículo 6, dispone que, quien «diere muerte a una mujer, por su condición de mujer»; El Código Penal del Perú, en su artículo 108-B, refiere que la muerte de «una mujer por su condición de tal»; La Ley N° 5777 de Paraguay, en su Artículo 50, refiere que, «el que matara a una mujer por su condición de tal»; o, como en México, el Código Penal para el Distrito Federal, en su Artículo 148 Bis, refiere: «por razones de género»; en Argentina en el Código Penal, en su Artículo 80, numeral 11, que refiere cuando «A una mujer cuando el hecho sea perpetrado por un hombre y mediare violencia de género»; y el Salvador, su Decreto Ley 520-2011, en su Artículo 45 refiere que la muerte que tiene lugar «mediando motivos de odio o menosprecio por su condición de mujer» (Ricaurte, 2022). En tal sentido, el *asesinato violento de mujeres* por el hecho de «ser mujer» o por «razones de género» es tipificado por la mayoría de las legislaciones de Latinoamérica como *feminicidio* – excepto en Europa–. Sin embargo, debo aclarar que en las legislaciones de Latinoamérica se regula de maneras muy diversas (o diferentes) el delito de *Feminicidio*, un claro ejemplo es la legislación penal del Estado Plurinacional de Bolivia.

La legislación boliviana, el 9 de marzo de 2013 promulga la Ley 348, “*Ley Integral para Garantizar a las Mujeres una Vida Libre de Violencia*”, prescribe el feminicidio como la muerte violenta de las mujeres *por razones de género*. La presente Ley tiene como objeto “establecer mecanismos, medidas y políticas integrales de prevención, atención, protección y reparación a las mujeres en situación de violencia, así como la persecución y sanción a los agresores, con el fin de garantizar a las mujeres una vida digna y el ejercicio pleno de sus derechos para vivir bien”. Al respecto, el Artículo 7.2. de la Ley 348 refiere que “Violencia feminicida: Es la acción de extrema violencia que viola el derecho fundamental a la vida y causa la muerte de la mujer *por el hecho de serlo*”. (la cursiva y negrilla es mía).

Ahora, llama la atención que el *legislador boliviano* haya *tipificado* en la legislación penal boliviana el delito de *femicidio* como aquel “quien mate a una mujer”; y *no lo habría hecho en razón* de su concepción primigenia, y en este sentido, se aparta del lenguaje primigenio –de *femicidio*– que identifica la *muerte violenta de las mujeres en razón de género* que tiene como su umbral jurídico la Convención Interamericana para Prevenir, Sancionar y Erradicar la Violencia Contra la Mujer “Convención de Belém Do Para”, que expresa que “...violencia contra la mujer cualquier acción o conducta, *basada en su género que cause muerte*...”, la Ley 348 (específicamente el artículo 7.2. de tratamiento de este ensayo) y la *razón de ser en su*

concepción primigenia acuñada por el feminismo (feminista Russel), quien definió que femicidio –o feminicidio– como: “*the killing of women because they are women*”. En tal sentido, “el femicidio se aplica al *murder of women by men motivated by hatred, contempt, pleasure, or a sense of ownership of women*” (Ricaurte, 2022). Por lo cual, es pertinente describir que en la legislación penal boliviana el delito de *Feminicidio*, se ubica en el Título VIII de Código Penal Bolivianos “CPB” dentro los “Delitos Contra la Vida la Integridad y la Dignidad del Ser Humano”, a través del Artículo 252 bis del CPB y con el siguiente texto:

Artículo 252 bis. (FEMINICIDIO). Se sancionará con la pena de presidio de treinta (30) años sin derecho a indulto, a quien mate a una mujer, en cualquiera de las siguientes circunstancias:

1. El autor sea o haya *sido cónyuge o conviviente* de la víctima, esté o haya estado ligada a ésta por una análoga relación de afectividad o intimidad, aun sin convivencia;
2. Por haberse negado la víctima a establecer con el autor, una relación de pareja, enamoramiento, afectividad o intimidad;
3. Por estar la víctima en situación de embarazo;
4. La víctima que se encuentre en una situación o relación de subordinación o dependencia respecto del autor, o tenga con éste una relación de amistad, laboral o de compañerismo;
5. La víctima se encuentre en una situación de vulnerabilidad;
6. Cuando con anterioridad al hecho de la muerte, la mujer haya sido víctima de violencia física, psicológica, sexual o económica, cometida por el mismo agresor;
7. Cuando el hecho haya sido precedido por un delito contra la libertad individual o la libertad sexual;
8. Cuando la muerte sea conexa al delito de trata o tráfico de personas;
9. Cuando la muerte sea resultado de ritos, desafíos grupales o prácticas culturales.”

Ahora bien, el legislador boliviano ha establecido en su Artículo 252 (ASESINATO) del CPB, que dispone que: “será sancionado con la pena de presidio de treinta o veinte años, sin derecho a indulto, el que matare: 1. A sus descendientes o *conyugue o conviviente*, sabiendo que lo son...” La regla implica que, habilita al juez para sancionar a la mujer que asesiné a su conyugue o conviviente –hombre–, sin embargo, habilita también al juez a sancionar a un hombre (biológicamente o por autopercepción) por el delito de asesinato de su conyugue o conviviente –Mujer– aplicando el Art. 252 del CPB, y esto probablemente genere *inseguridad jurídica* en la aplicación que tipifica el *asesinato* y el *feminicidio* (antinomía). En tal sentido, ustedes se preguntarán ¿El juez puede emitir una sentencia condenatoria en contra de un hombre –acusado– por el delito de asesinato a su conyugue o conviviente –mujer–?, la respuesta, al menos la mía, sería “depende”, si el caso es

mediáticamente relevante (contexto político, económico, social, periodístico, etc.) el juez o tribunal emitira su sentencia condenatoria por *feminicidio*, y si por alguna razón el juez –o la juez– no siente presión de ningún tipo y este –juez– comprende la *concepción primigenia* de feminicidio (teoría); *que es propiamente el asesinato misógino de una mujer por razón de género*, sentenciara condenando *asesinato*. No pretendo que el juez se aparte de la autoridad del derecho –legislación boliviana–, sin embargo, es pertinente precisar la clara inseguridad jurídica que genero el legislador, y este debe corregirse. O, en su defecto, también se aplicaría si este (Art. 251 CPB) no se ajusta al umbral establecido en el 252 bis.

Por otro lado, la expresión que utiliza el CPB sobre el *feminicidio* es: “a quien mate a una mujer”, se comprendería que, quien asesine a una mujer; sea un hombre o “una mujer que se auto percibe o identifique como un hombre –modificación del cuerpo por medios médicos, quirúrgicos o de otra índole–” será sancionado por el delito de *feminicidio en Bolivia*, este criterio se sustentaría en razón a la Ley No. 807 “Ley de identidad de género (en Bolivia está vigente).

La imprecisión del legislador boliviano al establecer que “solo matar a una mujer” y en lo que prescribe después es signo de *Feminicidio*, genera incertidumbre jurídica y social; la feminización del Derecho Penal⁵ boliviano contradice las razones del Derecho Penal y las garantías mínimas otorgadas al acusado para defenderse en un proceso justo. El feminicidio en Bolivia –en su tipificación– coincide con matices políticos e ideológicos de la más alta radicalidad (ya que el mismo fue propuesto solo por feministas y no por juristas, y otros profesionales pertinentes), por lo cual, no se puede determinar objetivamente si las razones de muerte de las mujeres son por *asesinatos misóginos por su condición de mujer*. Sin embargo, existe un aumento de muerte de mujeres (asesinado por hombre) –y hombres (asesinado por mujeres)– por circunstancias diferentes a las establecidas por la teoría del femicidio como conceptualización primigenia propuesta por el feminismo. Considero que la importancia y las razones suficientes, serían, en todo caso, establecer que el femicidio –o feminicidio– es el *asesinato misógino a una mujer por su condición de mujer –género–*.

Sobre la tipificación de *feminicidio* en la legislación penal boliviana, que refiere “Se sancionará con la pena de presidio de treinta (30) años sin derecho a indulto, a quien mate a una mujer”, al respecto, escribe Russell (2006, p. 78), “esto no explica por qué

no utilizan un término como *asesinato de mujeres*, en lugar de cambiar el significado de *feminicidio* de manera tan drástica”. Explica (Russell & Harnes, 2006, p. 80):

Por lo tanto, probablemente sus estudios incluyen solo unos pocos casos que no califican como feminicidio de acuerdo con mi definición. Debido a que muchos hombres que matan a sus parejas lo hacen porque son mujeres, las diferencias en nuestras definiciones están lejos de ser notables como es el caso de muchos otros tipos de asesinato. Sin embargo, espero que aquellos que escriben o dirigen investigaciones sobre los feminicidas de mujeres que no son sus parejas adopten mi definición en lugar de utilizar la definición despolitizada que usan algunos otros investigadores (Russell & Harnes, 2006, p. 80)

En tal sentido, la tipificación de *feminicidio* en el sistema penal –o legislación penal– de Bolivia no se ciñe a la conceptualización primigenia de feminicidio propuesto por la teoría feminista, ni mucho menos por el criterio legal de la Ley 348 (Art. 7.2)., es decir, la prescripción que utiliza el Código Penal Boliviano en el Artículo 252 bis. (FEMINICIDIO), es distinta a la *concepción primigenia* de lo que se considera como *feminicidio*. Obviamente, la tipificación de feminicidio varía según la legislación, pero jamás debe apartarse la conceptualización de la razón de su existencia.

Es evidente que se ha dejado de lado la concepción primigenia de lo que se debe comprender por *feminicidio en razón de género*, y el legislador boliviano ha establecido un lenguaje confuso y probablemente engañoso (contradice a la propia teoría del femicidio), y esto coloca al género masculino en un estado de indefensión frente a «La feminización del Derecho Penal». En tal sentido, Tuesta & Mujica (2015: Nota 4), afirman que, “muchos discursos penales feministas difunden interpretaciones del castigo legal y del victimario afines al derecho penal del enemigo. ¿De qué manera? Aquellos promueven un régimen de excepción para un individuo (varón), al que se le define como portador de características de peligrosidad, negándosele un estatus de igualdad jurídica”.

II. FEMICIDIO

La expresión de “*feminicidio*” proviene del neologismo conceptual de “femicidio” que se remonta al siglo XX. La socióloga feminista Diana Russell, refiere que la expresión *femicide* fue utilizado por vez primera en el Reino Unido (Perez Campo M., 2020, p. 95).⁶

⁶ “Sin embargo, el término quedó en desuso hasta la década de 1970, cuando adquirió relevancia gracias a los movimientos feministas, que lo reintrodujeron y politizaron en un intento de llamar la atención sobre los efectos nocivos de la desigualdad de género. La responsable de su renacimiento en Estados Unidos fue precisamente Russell, quien, tras usarlo por primera vez en una declaración escrita en el Tribunal sobre Crímenes contra la Mujer, en 1976, lo definió en 1992 —junto con Radford— como “el asesinato misógino de mujeres cometido por hombres” y, en 2001, como “el asesinato de personas del sexo femenino por parte de hombres por el hecho de pertenecer al sexo

⁵ Colina Ramírez refiere que en “la actualidad, el Estado mexicano, está viviendo lo que ha señalado Ontiveros Alonso como «La feminización del Derecho Penal»” (Colina Ramírez, 2019). Véase al respecto a Ontiveros Alonso, Miguel, *Derecho penal*. PG, primera reimpr., Inacipe-Ubijus, México, 2018, pp. 137 y ss.

Precisamente, la expresión de *femicidio* se utiliza en “A Satirical View of London at the Commencement of the Nineteenth Century (Corry)” en 1801 para significar “el asesinato de una mujer” (Russell & Harmes, 2006, p. 75).

En 1827 se publicó la tercera edición de *The Confessions of an Unexecuted Femicide*. Este breve manuscrito fue escrito por el perpetrador de un feminicidio, William MacNish, sobre el asesinato de una mujer joven. Y, de acuerdo con la edición de 1989 de *The Oxford English Dictionary*, feminicidio apareció en el *Law Lexicon* de Wharton en 1848, sugiriendo que se había convertido en un delito punible. Sin embargo, incluso después de mi reciente descubrimiento de la historia del término *feminicidio*, no me inclino a sustituir la definición del diccionario por la mía, debido a que estuve y aun lo estoy, convencida de que el aspecto sexista de la mayoría de los asesinatos de mujeres perpetrados por hombres requieren ser incorporados en la definición de feminicidio. Mi definición de feminicidio es *el asesinato de mujeres por los hombres por ser mujeres*. (Russell & Harmes, 2006, p. 76)

Por lo cual, la expresión *femicidio* tiene su uso desde hace más de dos siglos (Russell & Harmes, 2006, p. 75). *Femicidio* –o *Feminicidio*– es la muerte violenta de la mujeres, es decir, escribe Toledo Vásquez (2009, p. 24), *femicidio* es “la forma más extrema de terrorismo sexista, motivada por odio, desprecio, placer o sentimiento de propiedad sobre las mujeres”. (Toledo Vásquez, 2009, p. 24)

En cuanto al *femicidio*, ha sido definido como la “muerte violenta de mujeres, por el hecho de ser tales” o “asesinato de mujeres por razones asociadas a su género”. La expresión muerte violenta enfatiza la violencia como determinante de la muerte y desde una perspectiva penal incluirían las que resultan de delitos como homicidio simple o calificado (asesinato) o parricidio en los países en que aún existe esta figura. Existen, sin embargo, dentro de quienes utilizan la voz *femicidio*, posturas más amplias que abarcan situaciones tales como “la mortalidad materna evitable, por aborto inseguro, por cáncer y otras enfermedades femeninas, poco o mal tratadas, y por desnutrición selectiva de género” (Toledo Vásquez, 2009, p. 26).

Los feminicidios, escribe B. Zabel (2023, p. 17), “son homicidios de mujeres por el hecho de ser mujeres y tienen una motivación de género, incluyendo,

femenino”, utilizando la expresión “personas del sexo femenino” en lugar de “mujeres” para incluir a las niñas y a los bebés de dicho sexo. La llegada del concepto de *femicide* a América Latina fue muy bienvenida por las feministas. Al traducirlo al español, el término pasó por una interesante modificación formal y teórica, cuyo objetivo era comprender mejor la realidad latinoamericana. La activista feminista mexicana Marcela Lagarde decidió utilizar el vocablo “feminicidio”, en lugar de traducirlo literalmente al español como “femicidio”, para añadir un elemento de impunidad, de violencia institucional y falta de diligencia en América Latina respecto a las mujeres. A diferencia de lo que llamamos homicidio, el feminicidio se diferencia porque existe una motivación misógina y sexual en contra de las mujeres y niñas comúnmente por sus parejas, familiares, amigos e incluso extraños” (Canseco, 2020, p. 95)

por ejemplo, los homicidios invocando el “honor” (de una familia, de un grupo) o los homicidios durante abortos encubiertos/coercitivos”.

Al respecto, la expresión de *homicidio*, es definido como “el asesinato de un ser humano por otro”, o entendida también como “la persona que mata a otra” (Russell & Harmes, 2006, p. 73), en tal sentido, la expresión infiere a un *asesino que finaliza la vida de otra*. Russell (p.74, 2006.), refiere que “parece razonable inferir que el término *homicida femenino* se refiere a las mujeres asesinas y *homicida masculino* a los hombres asesinos. Sin embargo, no existen términos criminológicos comparables para el asesinato de mujeres y el asesinato de hombres”.

La expresión *femicidio* traducida del inglés *Femicide*, puede interpretarse, en español, como el término femenino de homicidio el cual solo puede ser entendido como un concepto el cual especifica el sexo de las víctimas (Russell & Harmes, 2006). En tal sentido, *Femicidio* homologa a homicidio y significaría el asesinato a mujeres (Russell & Harmes, 2006 p. 20). El *femicidio* o *feminicidio*, refiere Toledo Vásquez (2009, Nota 21), “está conformado por el conjunto de hechos violentos misóginos contra las mujeres que implican la violación de sus derechos humanos, atentan contra su seguridad y ponen en riesgo su vida (...)”.

D. Russell al ser una de las pocas feministas críticas del término *homicidio*, que refiere al asesinato de *mujeres por hombres*, prefiere utilizar la expresión *asesinato (murder)* en lugar de *homicidio (homicide)*, pues la feminista, “no pretende honrar la distinción legal” entre asesinato y homicidio (*maslaughter*) (Russell & Harmes, 2006).

El *femicidio* –o *feminicidio*⁷– es un delito o crimen de odio⁸ (*hate crimes*) en razón de género o orientación sexual el cual se infiere en el asesinato violento de una mujer «por el hecho de ser mujer» y producto de ello, el feminicida obtiene el *placer de asesinar* a la(s) mujer(es) por el «odio que tiene a la mujer, solo por ser mujer». *Feminicidio* –o *femicidio*– da cuenta a ciertos elementos, las cuales serían: “la misoginia (odio a las mujeres) presente en estos crímenes” (Toledo Vásquez, 2009, p. 27); el placer o satisfacción de asesinar a la(s) mujer(es), por su condición biológica de mujer; y “la responsabilidad estatal al favorecer la impunidad de éstos” (Op. Cit. p. 27). Por lo cual, debe sancionarse al feminicida *solo* cuando existe un asesinato a una mujer por parte de un hombre –biológicamente concebido como un hombre– *por motivos* de odio (emociones), desprecio de género, relación de poder y sumisión, o el de considerar a una

⁷ la Real Academia de la Lengua Española, en 2014, incorporó esta definición de *femicidio*: «la muerte de una mujer por razón de su sexo» y en diciembre de 2018, modificó la definición, sin apartarse del énfasis en los motivos: «Asesinato de una mujer a manos de un hombre por machismo o misoginia».

⁸ Ver (Zabel, 2023); (Ricaurte, 2022); (Russell & Harmes, 2006)

mujer como una propiedad (Ricaurte, 2022). En tal sentido, en los casos de femicidio –o feminicidio– el juez tiene que atribuir al agente que mató a una mujer la *intención* de matarla *motivado por odio por ser mujer o por razones de género* y debe *justificar* tal atribución (Ricaurte, 2022).

En un caso muy relevante y ampliamente conocido en el Perú, refiere Vázquez (2019) por su trascendencia mediática, la Sentencia peruana refiere que:

«Para que la conducta del hombre sea feminicidio no basta con que haya conocido los elementos del tipo objetivo (condición de mujer, idoneidad lesiva de la conducta, probabilidad de la muerte de la mujer, creación directa de un riesgo al bien jurídico), sino que además haya dado muerte a la mujer “por su condición de tal”. Para la configuración del tipo penal al conocimiento de los elementos del tipo objetivo, se le agrega un móvil: el agente la mata motivado por el hecho de ser mujer. El feminicidio deviene así en un delito de tendencia interna trascendente» (Vázquez, 2019).⁹

a) *Feminicidio por “Intereses de Hombre”*

Ya se advirtió, *supra*, que feminicidio es la expresión que alude al asesinato –si se quiere “violento”– de mujeres, *solo por que son mujeres*. Ahora, puede variar los tipos de feminicidio que las legislaciones prevean en sus países, pero, obviamente, deben seguir una definición o concepción, y no apartarse de ella, generalmente lo hacen por razones ideológico-político.

Los tipos de feminicidio que aluden varios investigadores y teóricos, son sencillamente incoherentes y pretenden desnaturalizar la expresión primigenia de expresión feminicidio, que es precisamente, un delito o crimen de *odio (hate crimes) en razón de género o orientación sexual el cual se infiere en el asesinato violento de mujeres* «por el hecho de ser mujeres» y producto de ello, el feminicida obtiene el *placer de asesinar* a las mujeres por el «odio que se tiene a la mujer por ser mujer».

Sin embargo, el Feminicidio por intereses de hombre, puede resultar interesante tratarlo en las legislaciones penales, razón por la cual, debe evaluarse la tipificación de este tipo penal cuando se asesine a una *mujer por otra mujer por intereses de hombre*. Tipificar el delito de *feminicidio por intereses de hombre*, se tiene cuando una mujer cometa asesinatos por descubrimiento del sexo de sus hijos; asesinato por marido/suegro/suegra por gusto; Asesinato relacionado con la dote; Muerte relacionados con la mutilación genital; Cómplices de feminicidio: esclavitud sexual en la cual la esposa/pareja ayuda al marido/pareja a cometer feminicidio; esposa que golpea a sus hijas hasta asesinarlas por incitación del padre; Suicidios de

mujeres obligadas a matarse así mismas; feminicidios de honor, y otros (Russell & Harmes, 2006, p. 80-82).¹⁰

III. FEMICIDIO Y LA PRUEBA DE LOS ESTADOS MENTALES

Femicidio debe comprenderse como «motivos de odio a la mujeres, solo por ser mujer». En tal sentido, para que se configure el delito de femicidio -o feminicidio- es indispensable *probar* los «motivos de odio de género» que tuvo el feminicida para asesinar a una mujer (Ricaurte, 2022). La expresión «odio de género», refiere Ricaurte (2022, Nota 11), “se usa indistintamente para señalar el *odio* «a la orientación sexual», «a la identidad de género», «a la expresión de la identidad de género», o «a la mujer por ser mujer”, es decir, el «odio a la mujer por ser mujer».

La literatura feminista tiene varias y diversas referencias sobre los estados mentales del hombre que le llevarían o podrían llevarle a matar a una mujer. Para empezar, las «creadoras» de la palabra feminicidio, Diana Russell y Jane Caputi, lo definieron como «el asesinato de mujeres realizado por hombres motivado por odio, desprecio, placer o un sentido de propiedad de la mujer». En esa misma línea, la organización no gubernamental peruana Flora Tristán califica al feminicidio como un crimen de género que es realizado por agresores cuya intención es dominar, ejercer control y negar la autoafirmación de las mujeres como sujetos de derechos, a través del uso de la violencia. Sin embargo, calificaciones como esta se topan con un gran problema pues el tipo penal exigiría *la prueba de esos estados mentales o psíquicos* (Vázquez, 2019).

a) *¿Qué son los estados mentales?*

Podemos iniciar haciendo la siguiente pregunta, ¿Qué son los estados mentales?, bueno, para responder esta pregunta seguimos a Gonzales Laver (2022) quien siguiendo el pensamiento de Richard Wollheim refiere que son:

“las percepciones, tales como oír un coro de maitines o ver una constelación de estrellas; las sensaciones, como el dolor, los picores, las punzadas de hambre o sed; los sueños y los ensueños; los momentos de desesperación, aburrimiento o lujuria; los momentos de inspiración; las evocaciones; las imágenes fantaseadas y las melodías oídas en la cabeza; y los pensamientos, tanto los pensamientos

⁹ Sentencia núm. 43 de Ayacucho de 16 de febrero de 2018 dictada por la Corte Superior de Justicia de Ayacucho, Juzgado Penal Colegiado (caso Arlette), 67 y 68.

¹⁰ Russell, escribe que “parece que las feministas hindúes han adoptado la definición original de feminicidio de Radford y mía, adaptándola a la realidad del asesinato de mujeres en su país. Las jovencitas y las mujeres hindúes enfrentan una realidad en la cual los fetos femeninos son abortados con frecuencia debido a la preferencia ampliamente extendida por los niños varones. Las bebas y las niñas también mueren debido a la negligencia de libertad de sus madres y el marido de una mujer, su suegra o su suegro no con poca frecuencia participan en el asesinato de la esposa debido a que no están satisfechos con el monto de la dote que recibieron por ella parte de sus padres” (Russell & Harmes, 2006, p. 81). También se debe ver el cuadro elaborada por Russell (p. 82) que propone esta tipificación.

que pensamos, como los que se cuelan en nuestra cabeza sin invitación”.

De forma más sistemática, a decir de Gonzales (2022), se puede distinguir como “(a) voliciones (como los deseos y las intenciones), (b) cogniciones (creencias, conocimientos), (c) percepciones y sensaciones, (d) estados afectivos (emociones, estados de ánimo) y (d) actos mentales (planear, deliberar, decidir, etc.)”.

Gonzales (2022) describe una serie de propiedades que permiten diferenciar este tipo de hechos mentales de los hechos físicos, las cuales serían la:

- a) *Consciencia*: Normalmente, somos conscientes de los estados mentales que tenemos. Podemos entender la consciencia como una especie de conocimiento “de lo que sucede dentro de nosotros” no fundado en la evidencia empírica acerca de rasgos del mundo externo: Si me pellizco el brazo, experimento dolor y por ello sé que el brazo me duele, y lo sé con independencia de que me vea a mí mismo sacudirlo o gritar; si deseo un vaso de cerveza, sé que lo deseo, sin necesidad de esperar a ver si me levantaré e iré a la nevera; y si estoy preocupado, sé –porque lo siento– que lo estoy.
- b) *Qualia*: Ahora bien, hay cierta diferencia cualitativa en cómo experimento mi dolor, mi deseo o mi preocupación. Decimos entonces que estos estados mentales se corresponden con diferentes sensaciones internas o qualia. Los qualia son la manera peculiar como cada estado mental emerge a mi consciencia, el componente fenomenológico de los estados mentales. La consciencia (y los qualia) establecen una importante asimetría entre la manera como conocemos nuestros estados mentales y la manera como conocemos los de los demás; este último conocimiento sí requiere una inferencia a partir de la observación de la conducta del otro. Un ejemplo que ayuda a entender la noción de qualia puede ser el siguiente: supongamos que María tiene una extraña enfermedad que no le permite ver los colores; todo lo ve en blanco y negro, como en las antiguas televisiones. María se ha interesado mucho por el fenómeno de los colores y ha estudiado e investigado todo lo que hay que saber sobre ellos, hasta convertirse en una eminencia en el tema. Desde el punto de vista físico y neurofisiológico sabe todo lo que hay que saber de los colores. Pero aún así podemos decir que le falta algo: le falta la experiencia de haber visto el rojo, el verde, el azul... Si de repente se curara de su enfermedad, aprendería algo más sobre los colores (si realmente lo sabe todo sobre los colores desde un punto de vista físico, incluyendo las reacciones neurofisiológicas correspondientes, pero le falta algo, ese algo no puede ser físico; por ello este ejemplo se ha usado también para mostrar que las propiedades mentales no son reducibles a propiedades físicas).
- c) *Contenido Mental*: Otra característica de muchos estados mentales consiste en poseer un contenido representacional, esto es, en tener la capacidad de versar o ser sobre objetos y estados de cosas del mundo (que, además, no tienen por qué estar presentes o existir en realidad, sino que pueden pertenecer al

pasado o al futuro o incluso ser ficticios) distintos de ellos mismos. La creencia de que mañana lloverá se refiere a un contenido (“mañana lloverá”). Dado un estado mental con contenido representacional, podemos distinguir entre su contenido y su modo psicológico: “Creo que mañana lloverá” y “Deseo que llueva mañana” son dos estados mentales que se diferencian por su modo psicológico, pero no por su contenido (a los estados mentales con contenido mental podemos llamarlos también actitudes proposicionales).

- d) *Subjetividad*: Otra característica propia de los estados mentales es su modo subjetivo de existencia. Mis dolores, temores, odios, deseos y creencias son exclusiva-mente míos. En opinión de John Searle se trata no solo de una subjetividad epistemológica (la consciencia), sino también ontológica: “Consideremos, por ejemplo, el enunciado ‘tengo dolor de espalda’. Tal enunciado es completamente objetivo en el sentido de que lo convierte en verdadero la existencia de un hecho real y no depende de las actitudes de los observadores. Sin embargo, el fenómeno mismo, el dolor real mismo, tiene un modo subjetivo de existencia.
- e) *Causalidad Mental*: A todas estas propiedades hay que añadir el hecho de que los estados mentales no son causalmente inertes, sino que interactúan entre sí y con estados físicos; esto es lo que los filósofos de la mente llaman causalidad mental. Los estados mentales parecen causar hechos físicos: nuestras emociones, creencias y deseos causan nuestro comportamiento. Mi miedo a que un perro me muerda causa que salga corriendo y mi deseo de saciar la sed, junto con las creencias adecuadas, causa que vaya a la nevera a por una cerveza. Pero para que se hable de causalidad mental el efecto debe producirse precisamente en virtud del contenido mental. Una manera de explicar que los estados mentales causan hechos físicos consiste en afirmar que tienen un componente o sustrato físico (neuronal) y atribuir su poder causal a ese sustrato. Por ejemplo, el miedo a que el perro me muerda causa mi conducta porque se corresponde con ciertos cambios neurofisiológicos que disparan señales eléctricas que estimulan los músculos. Sin embargo, la relación entre esos estados neuronales y la conducta no sería un caso de causalidad mental, porque en esta explicación el contenido de la emoción (el miedo al perro, la creencia de que ese perro pone en riesgo mi integridad física) no juega ningún papel. Supongamos una soprano que hace estallar un vaso cantando el aria *Il dolce suono* de Donizetti. El aria posee un significado (“*Il dolce suono mi colpì di sua voce! Ah, quella voce m’è qui nel cor discesa!...*”), pero no es el significado, sino las vibraciones provocadas por la voz de la soprano, las que rompen la copa (con total independencia de su significado), por lo que este no sería un caso de causalidad mental. El desafío que plantea la causalidad mental es explicar que nuestras razones para actuar tienen influencia o producen una diferencia en la probabilidad de que actuemos de una u otra manera que varía según su contenido. (González Lagier, 2022).

Al respecto, la prueba de los estados mentales puede comprenderse bajo dos concepciones o reconstrucciones cuando valoramos los estados

mentales de una persona. Estas concepciones son las siguientes: *cognoscitivista* y *no cognoscitivista*. La primera concepción cognoscitivista alude a que las *intenciones* de un sujeto pueden demostrarse mediante *procesos inferenciales* a partir de *hechos externos* de un sujeto; en tan sentido, los juicios de las personas son susceptibles a verificación a efectos de demostrar la verdad o falsedad. La segunda es la concepción no-cognoscitivista, esta concepción apela al criterio de que las *intenciones* no se descubren sino que se *imputan* conforme criterios, en tal sentido, la descripción de los hechos mentales *no se puede probar*, a este efecto, no se produce un juicio susceptible de verdad o falsedad. Por lo tanto, esta concepción asume que no existen estados mentales y por lo cual no deben ser sujetos de valoración en un proceso judicial (Vázquez, 2019).¹¹

En mi opinión, (...) la filosofía de la mente aporta argumentos sólidos para aceptar una concepción cognoscitivista de la prueba de los estados mentales: Frente a los argumentos ontológicos que la rechazan es posible poner de manifiesto (a) que negar la existencia de estados mentales deja sin explicar un importante aspecto de la realidad y (b) que entre el materialismo eliminacionista y el dualismo cartesiano hay alternativas plausibles. Los argumentos epistemológicos que aducen la imposibilidad de conocer los estados mentales de los demás con suficientes garantías, por su parte, parecen olvidar que los seres humanos poseen la habilidad de adscribir estados mentales de una manera aparentemente exitosa. Por último (aunque esto ya queda fuera de la filosofía de la mente), frente al argumento de que los fenómenos psicológicos no son jurídicamente relevantes, cabe oponer los problemas de una objetivización de la responsabilidad penal para una aplicación justa del Derecho. (González Lagier, 2022)

El feminicidio, sabemos muy bien, es el asesinato violento de una mujer mediando motivos de odio o menosprecio por su condición *de mujer*. Este criterio da a suponer que el legislador ha especificado en la tipificación de feminicidio los criterios técnicos y científicos que consideran que exista el odio o menosprecio a la condición de mujer, es decir, los estados mentales del feminicida deben ser comprobados a partir de los hechos externos. Esto suena complicado, sin embargo, la mayoría de las legislaciones han preferido optar la solución más fácil y condenar a un hombre (Biológicamente), incluso cuando este no podría ser el autor del feminicidio, pero puede adecuarse al estándar que dispone la norma jurídica. Solo como un ejemplo, en la legislación Boliviana, el delito de feminicidio, solo se debe probar que existió una relación sentimental, afectiva o íntima, aunque en esta no haya existido convivencia; Por haberse negado la víctima a establecer con el autor,

una relación de pareja, enamoramiento, afectividad o intimidad; La víctima que se encuentre en una situación o relación de subordinación o dependencia respecto del autor, o tenga con éste una relación de amistad, laboral o de compañerismo; entre otros, que parecen fácil de probar (puedes probarlo mediante un certificado de matrimonio, mensajes de texto, correo electrónico, o una declaración de un testigo, etc.). al respecto:

A asesino por odio y menosprecio a B, solo por ser B, a este efecto, A se da a la fuga; sin embargo, B mantenía una relación sentimental o tuvo una relación laboral con C; mientras que D (como testigo) declara ante instancias judiciales que C era el novio o compañero laboral de B, y que C tiene un temperamento difícil de controlar, es celoso y fue algo posesivo con B; y definitivamente D acusa a C por feminicidio.

Aquí podemos apreciar la facilidad con la que se puede demostrar que "C" cometió *feminicidio* contra "B" (al menos en Bolivia); ya que la legislación boliviana lo prevé en el Art. 252 bis. 1, 2 y 3 del Código Penal boliviano. Mientras que "A", queda impune, y podría estar planeando su próximo crimen contra una mujer o podría estar asesinando a una mujer, solo por ser mujer. Y lo correcto sería:

En general se sostiene: (1) Para que la muerte de una mujer «Y» odiada por un agente «X» sea feminicidio, la acción «X mató a Y» debe ser *intencional*. Y (2) Para que el homicidio de una mujer «Y» sea feminicidio deben encontrarse razones suficientes que permitan inferir la *motivación* basada en el *odio de género* que tuvo un agente «X» para matar a la mujer. (Ricaurte, 2022)

Por lo tanto, *feminicidio* debe comprenderse como el *asesinato de una mujer, feminicidio debe comprenderse como el asesinato de una mujer*, solo por ser mujer, y este *debe estar motivado* por el odio, desprecio, ciertos placeres o incluso la necesidad de dominar o controlar a una mujer, porque este hombre ve a las mujeres inferiores a él. Este entendimiento puede resultar complicado comprenderla, sin embargo, escribe Taruffo, citado por Vázquez (2019), que "[s]e trata, esencialmente, de hechos que pertenecen a la esfera psicológica, sentimental o volitiva de determinados sujetos y consisten en sentimientos, valoraciones, actitudes, preferencias, intuiciones o voluntades».

Si asumimos que los hechos mentales pueden probarse en un proceso judicial, nos estamos adheriendo a la concepción cognoscitivista; lo cual implica que debemos sostener que los estados mentales de un feminicida pueden ser conocidos a partir de hechos externos del feminicida. Es decir, los estados mentales o psicológicos del feminicida pueden inferirse a partir de los hechos externos, lo cual es susceptible de verdad o falsedad. Al respecto, Taruffo, citado por Vázquez (2019) refiere que el hecho psíquico «es más bien "sustituido" por una constelación de indicios que se consideran típicamente equivalentes al

¹¹ Sobre este entendimiento Carmen Vasquez se sustenta en la tesis de González Lagier, D., 2005: *Quaestio Facti. Ensayos sobre prueba, causalidad y acción*, Lima-Bogotá: Palestra-Temis.

mismo y que representan el verdadero objeto de la determinación probatoria».

Una valoración racional de las pruebas no solo exigirá prestar atención a las máximas de la experiencia que participan en nuestros procesos inferenciales, sino que hay que explicitarlas y justificarlas. Y aquí es donde se le debe pedir a los jueces un esfuerzo especial en su obligación de motivar sus decisiones en casos de feminicidio: deben explicitar y justificar la(s) generalización(es) basada(s) en el género que los llevan a inferir (o no) que un hombre mató a una mujer «por ser mujer», i. e. que su conducta es (o no) explicable mediante un estereotipo de género. Incluso explícitamente refutando el uso de otras generalizaciones en el razonamiento que pudieran también explicar las motivaciones del comportamiento del acusado y que nos llevarían a encajar los hechos en otros tipos delictivos, no necesariamente en el feminicidio.

(...) la identificación de los hechos externos que permitirían inferir hechos internos sobre las motivaciones de un hombre al matar a una mujer dependa de las máximas de experiencia de los jueces: 1) se pide una suerte de autoevaluación para identificar y explicitar claramente las generalizaciones en juego, y 2) a veces ello exige previamente toda una reeducación de los individuos dada la cultura social de la que son parte. Sin embargo, también debe haber un trabajo de identificación de otras generalizaciones aplicables que permitirían explicar el comportamiento de un individuo.

Una opción adicional a las máximas de experiencia como fuente de la generalización hechos externos-hechos internos sería el conocimiento experto. Es decir, que fueran los expertos quienes debieran identificar los estereotipos normativos de género que servirían de base para inferir los hechos mentales a partir de hechos externos del sujeto. Y aquí se abre otro escenario no carente de problemas, entre los cuales quizá son tres los que valga traer a colación: 1) ¿quiénes son los expertos en esta materia: los psicólogos, los antropólogos, los sociólogos?, ¿alguna otra especialidad? 2) Y, aún siendo capaces de identificar el área de expertise correspondiente, todavía tendríamos la gran tarea de interesarnos por conocer la fiabilidad de sus afirmaciones, no solo de forma genérica, sino también en su aplicación al caso concreto. Y 3) Además de la fiabilidad, no puede obviarse que los expertos podrían sufrir parcialidades disposicionales sobre el tema pues, al igual que los jueces, no dejan de ser individuos pertenecientes a una determinada sociedad.

IV. SISTEMAS DE VALORACIÓN DE LA PRUEBA

a) Sistema de las Pruebas Irracionales «Mágica y Arcaicas»

En los pueblos primitivos de la Europa Medieval «Alta Edad Media», según se tiene, la actividad procesal primitiva pretendía, al menos en la romana-germánica, garantizar deductivamente la verdad de la conclusión fáctica a través de la *prueba física del acusado* ante la que sucumbir era signo de culpabilidad y resistir era signo de inocencia, y esta fue la mayor expresión en el fundamento de las *pruebas irracionales* de tipo mágico y arcaico, y típicamente en los juicios por ordalía, de

“duelo judicial, el juramento, la adivinación” (Ferajoli, 1995, p. 135-136 y n.30). Sobre las pruebas mágicas «irracionales» típicamente en los juicios por ordalía, escribe Ferrajoli (1995, Nota 30.), “documenta su presencia, además de entre los pueblos primitivos entre los antiguos egipcios, los asirios y los babilonios, los judíos, los griegos, los celtas, los eslavos y los pueblos germánicos”. Este “método” de «juicios de Dios» primitivo y bárbaro le costaba *incluso* la vida a un inocente –supuesto culpable de un delito– (verdadera víctima del sistema irracional). El juicio por ordalía en sentido amplio, designa, a decir de Gascón Abellán (2010, p. 12-13), a “cualquier experimento gnoseológico-místico donde se halla postulado un orden oculto del mundo diagnosticable mediante distintas vías, desde técnicas adivinatorias a una *pugna inter duos ad probationem veritatis*”. En tal sentido, las ordalias eran formulas rituales de tipo mágico y arcaico que se usaban en los sistemas procesales de los pueblos primitivos de la Alta Edad Media para establecer la culpabilidad o inocencia de una persona acusada.

Si se considera el tormento como criterio de verdad, se hallará tal falaz y absurdo como lo eran los juicios de Dios. La disposición física del cuerpo es la que determina, así en aquella como en estos, el éxito de la prueba. En todas estas pruebas puede ser condenado el inocente, y absuelto el verdadero reo: este modo de determinar la verdad no tiene la menor relación con ella... Al contrario, el tormento es una experiencia que se hace para ver si el acusado es efectivamente reo, y al mismo tiempo una pena cruel e infamante que se impone a un hombre cuando todavía se duda si es reo o inocente. (Ferajoli, 1995, Nota 33.)¹²

En el proceso primitivo la disposición del cuerpo físico del acusado era fundamental para resolver un caso en concreto, es decir, del cuerpo físico del acusado e incluso del inocente se determinaba la *prueba fundamental* del proceso que resolvía el conflicto. La formalidad de la *pruebas mágicas e irracionales* radicaba en la restricción o impedimento del juez en investigar y razonar la *prueba de los hechos* en un caso concreto, de modo que, al acusado, en un caso concreto, se le conminaba a colocar sus manos en un hierro candente o hierro caliente, y si el acusado se quema las manos, es culpable, y si no se quema, es inocente. A decir de Gascón Abellán (2010, p. 13), “caminar sobre brasas incandescentes sin sufrir lesión, recoger una piedra o un anillo en agua hirviendo, encerrar al acusado y al acusador con una fiera y dar la razón al que resulta indemne”. Este tipo de fórmulas mágicas e irracionales, en la época medieval, determinaba el convencimiento formal del juez para decidir en un caso concreto, la prueba ritual se hizo por mucho tiempo, y en la actualidad aún se sigue

¹² Ferrajoli refiere que ya fue mencionado por G. Filangieri, o.c. lib. III, cap. XI, pp.137-138 y 141.

realizando, en tribus africanas, en Egipto, etc.; por ejemplo, en los casos de adulterio a las mujeres se les obliga a lamer un hierro candente para ver si se quema o no la lengua, si se quema es culpable y si no es inocente.¹³

Por otro lado, la tortura, era un medio legítimo y fundamental para determinar el éxito del proceso, pues era *prueba mágica* con el que el acusador podía tener la razón frente al acusado, sin embargo, en ocasiones el acusado resistía la tortura, y probablemente, producto de ello, se le podría considerar *inocente* de lo que se lo acusaba.

La tortura, por otra parte, tenía un carácter participativo y negocial, en el sentido de que la confesión obtenida mediante ella equivalía a la autenticación de la instrucción por parte del acusado y a su implicación en la condena: el acusado, afirmaba la *Glossa de Acursio*, debe, por así decirlo, juzgarse y condenarse a sí mismo «per suam confessionem: unde seipsum condemnavit» (Ferajoli, 1995, Nota 33.)

Empero, la resistencia a la tortura y la falta de confesión no significaban una victoria del acusado o reo “a veces venían también, refiere Ferajoli (1995, Nota. 33), interpretadas como efecto de un *maleficium taciturnitatis*, es decir, encantamientos o, peor, de un *artificium diaboli*”.¹⁴

Bajo estos términos es posible rastrear que los fundamentos epistemológicos de la prueba irracional «mágicas y arcaicas» son idénticas, en *sentido de continuidad*, a las pruebas legales «racionales». Escribe Ferrajoli (1995, p. 136), “la identidad del esquema epistemológico señala arquetipos culturales comunes”.

También las pruebas mágicas, al igual que las pruebas legales, son en realidad *pruebas formales* en el sentido de que excluyen la investigación y la libre valoración del juez, sustituyéndolas por un juicio infalible y superior, divino en el primer caso y legal en el segundo. Y también las pruebas legales, como las pruebas mágicas, son por otra parte *pruebas simbólicas* en el sentido de que actúan como «signos normativos» de la conclusión deducida, hasta el punto de que las semi-pruebas y los cuartos de prueba legales aparecen siempre como signos normativos de algo: si no de la culpabilidad, de una semi o menos que semi-culpabilidad que comporta una aemi-pena o una pena en todo caso reducida. Una conformación de ello es el hecho de que la tortura, que arruina ininterrumpidamente el mecanismo de las pruebas legales y particularmente el de la confesión, en el procedimiento inquisitivo premoderno

mantiene sin duda el carácter de ordalía de un juicio de Dios, o sea, de una prueba física ante la que sucumbir es signo de culpabilidad del acusado y resistir es signo de su inocencia. Desarrollo de las artes mágicas, recrudescimiento del sentimiento supersticioso, creencias oscuras en el demonio y fanatismo religioso forman, por lo demás, el tenebroso escenario cultural que circunda los procesos contra brujas, brujos y herejes, contra quienes más violentamente se desencadena, en la época contrarreforma, la persecución inquisitorial (Ferajoli, 1995, p. 136).

El sentido formal de las pruebas irracionales como las pruebas legales constituyen en supuestos de *pruebas formales*, lo cual en ambos sistemas se excluye la investigación –epistemología– y la libre valoración del juez, sustituyéndolos por una especie de juicio infalible y superior. (Gascón Abellán, 2010, p. 14)

Que dicho juicio se «divino en el primer caso y legal en el segundo» no oscurece la comentada continuidad entre ambos tipos de prueba; pone sólo de manifiesto la absoluta irracionalidad de la primera, por basarse en una tesis mágica o sobrenatural o religiosa, y la mayor racionalidad de la segunda, por basarse en leyes de la naturaleza o en máximas de experiencia. En suma, la prueba legal del procedimiento inquisitivo es también, como la de ordalía, un tipo de prueba formal, si bien, frente a la magia precedente, el proceso inquisitivo quiere presentarse como racional. (Gascón Abellán, 2010, p. 14)

Este absurdo e irracional forma de establecer la culpabilidad del acusado sugiere pensar en un nuevo método civilizado y racional de *valoración de la prueba*. La prueba irracional «mágicas y arcaicas» (sistema de pruebas de ordalía) fue prohibido, según refiere F. Carrara, citado por Ferrajoli (1995, p. 136), “por el cuarto *concilio Lateranense* de 1215, del que nació el proceso inquisitivo”.

b) Tres Sistemas Antagónicos de Valoración de la Prueba

En la historia de la dogmática procesal sea ha referido a tres sistemas antagónicos de valoración de la prueba. Lo que los hace antagónicos, son los factores que operan como criterios justificativos de la hipótesis planteada en el proceso –conocidos como enunciados facticos-¹⁵ (Dei Vecchi, 2020).

i. Sistema de Prueba Legal

El primer sistema es conocido como sistema de *prueba legal o tasada*, escribe Vecchi (2020), “lo que determina qué elementos poseen relevancia justificativa y con qué grado respecto del enunciado fáctico de que se trate son las disposiciones legislativas”.

El criterio de la prueba legal se acentuaría a un sistema de regulación previa, ese sistema predetermina

¹³ Consideraciones tomadas de Jordi Nieva Fenoll, en su conferencia dictada en la Academia de la Magistratura de la República del Perú. Con el título de ponencia: valoración de la prueba penal. El video puede hallarse en la plataforma de Youtube.

¹⁴ “Gracias al cual los torturados «tacent, quia dolorem non sentiunt; vel quia loqui non possunt, etiam si sentiunt; vel quia nec sentiunt, nec loqui possunt, ut quando profundo sommo opprimuntur (somnum hume conciliat demon causis mere naturalibus, ut medicamentis soporiferis et similibus), vel sane quia licet sentiunt et loqui possint, robusti tamen atque fortes omnia tolerant», véase en (Ferajoli, 1995, Nota 33).

¹⁵ DEI VECCHI, Diego. Prueba libre, justificación epistémica y el noble sueño de los estándares de prueba. *Rev. derecho (Valdivia)* [online]. 2020, vol.33, n.2 [citado 2023-02-01], pp.25-48. Disponible en: <http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-0950-2020000200025&lng=es&nrm=iso>. ISSN 0718-0950. <http://dx.doi.org/10.4067/S0718-09502020000200025>.

de forma general y abstracta el valor que debe atribuirse a cada elemento probatorio introducido en el proceso (prueba legal o tasada propio del proceso canónico) (Taruffo, 2002, p.387).

Sobre este sistema de valoración de la prueba, la norma positiva es quien refiere por anticipado el valor o grado de eficacia que tiene cada elemento de juicio – prueba–, la prueba debe cumplir con el umbral que establece la Ley precisa; en tal sentido los hechos deben adecuarse a la regla o *estandar legal probatorio*.

El juez no puede razonar y mucho menos atribuir un *valor* a la prueba, no tiene libertad de apreciación, es decir, el legislador a través de una estandar o regla atribuirá un valor o eficacia a la prueba; *con lo cual queda determinada la decisión sobre la reconstrucción del hecho, transformada así en una operación jurídica* (Cusi Alanoca, 2022, p. 31).

ii. Sistema de Intima Convicción

Sobre el segundo sistema de valoración de la prueba que es conocido como sistema de valoración de *íntima convicción*, lo cual sugiere Vecchi (2020) que:

el valor justificativo de ciertos elementos respecto del enunciado fáctico es el impacto psicológico que esos elementos provocan en quien debe juzgar la suficiencia “probatoria”. Por cierto, el estado mental relevante puede ser determinado por el legislador (piénsese en expresiones legisladas como convicción suficiente, sospecha, duda, plena convicción, etc.), pero esto no hace que la índole de factores relevantes sea, solo por ello, legislativa.

Se puede referir sobre este método que surge ante la reacción de la prueba legal o tarifa legal, tiene como objeto erradicar los excesos del lenguaje jurídico, la ambigüedad o la inconstitucionalidad de una norma en el que ha cometido el legislador. Se otorgó al juez amplias facultades sobre la apreciación de la prueba al no estar sometido a reglas. Además, la libertad al momento de la formación de su convencimiento, claro está, que dicha libertad debe ser entendida en sus justos términos y no como arbitrariedad (Cusi Alanoca, 2022, p. 35).

iii. Sistema de Sana Crítica Racional

a. Primera Regulación Positiva del Sistema de Sana Crítica

La primera consagración normativa del sistema de sana crítica, se encuentra en la Ley de amnistía número 27 del año de 1831, a partir de entonces ha tomado relevancia en el campo procesal (Cusi Alanoca, 2022, p. 39). Seguidamente, y en sentido fuerte, la *sana crítica* fue positivada en Europa, específicamente en el Derecho procesal español, me refiero, al Reglamento del Consejo Real en los negocios contenciosos de la Administración, de fecha 30 de diciembre 1846 (Cusi Alanoca, 2022, p. 40).

El sistema de sana crítica, como método de valoración probatoria, tiene sus orígenes en los Artículos 147 y 148, del Real Reglamento del Consejo Español, el

cual establecía que el Consejo debía apreciar “según las reglas de la Sana Crítica, las circunstancias conducentes a corroborar o disminuir la fuerza probatoria de las declaraciones”; previsión normativa que sirve de antecedente inmediato a la Ley Española en Enjuiciamiento Civil de 1855, en cuyo Art. 317, estableció que:-

Los jueces y tribunales apreciarán según las reglas de la Sana Crítica, la fuerza probatoria de las declaraciones de los testigos.

Escribe Cusi (2022, p.40), citando a Barrios, extrae una cita de la clásica obra de Aguilera de Paz y Rivas Martí, contemporáneos y comentaristas de la Ley Española de Enjuiciamiento Civil de 1855, el cual refiere lo siguiente:

se intentó formularlas dos veces en la Comisión Codificadora, cuando se discutió la vigente Ley de Enjuiciamiento Civil española, más hubo de desistirse de este propósito ante la imposibilidad de fijarlas de una manera taxativa, y por eso no se hallan determinadas ni en ése ni en ningún otro texto legal (Cusi Alanoca, 2022, p. 40).

Al respecto, el origen de la sana crítica, escribe Cusi (2022, p.40) citando a *Sentis Melendo*, al expresar que, “el concepto y la expresión nos pertenecen: son netamente hispánicos, como sistema de valoración de la prueba, o mejor como expresión de esa valoración, no se encuentra”.

Este criterio, expresa manifiestamente que la sana crítica fue acuñada en la legislación española, esta afirmación se sostiene en la Ley de Enjuiciamiento Civil de 1855 que influye directamente en las legislaciones latinoamericanas.

La nueva Ley de Enjuiciamiento Civil Española de 1881, disponía en su artículo 659, que:

los jueces y tribunales apreciarán la fuerza probatoria de las declaraciones de los testigos conforme a las reglas de la sana crítica, teniendo en consideración la razón de la ciencia que hubieren dado y las circunstancias que en ellos concurren.

En tal sentido, el legislador ha establecido que, en la mayoría de los países hispanoamericana, el sistema de valoración de la prueba es el de la *sana crítica*, en tal sentido, el juez o tribunal debe valorar la prueba conforme las reglas de la sana crítica.

El sistema de sana crítica racional como método de valoración de la prueba en la legislación boliviana, se expresa en los siguientes umbrales: el Artículo 1286 del Código Civil, Artículo 145 del Código Procesal Civil, Artículo 173 del Código de Procedimiento Penal, Artículo 332 del Código de las Familias y del Proceso Familiar, Artículo 219 del Código de la Niña, Niño y Adolescente, Artículo 3.j del Código Procesal del Trabajo, Artículo 47 de la Ley del Procedimiento Administrativo, Artículo 98 de la Ley de Conciliación y Arbitraje, Artículo 87 de la Ley de Régimen Disciplinario

de la Policía Boliviana, y, las que disponga las demás normas pertinentes.

V. VALORACIÓN RACIONAL DE LA PRUEBA. SISTEMA DE SANA CRÍTICA

El sistema de *sana crítica como método de valoración racional de la prueba* remite a reglas de la sana crítica y la razón; la sana crítica, debe ser comprendida como un juicio de corrección del pensamiento humano para *decidir*, y las reglas de la sana crítica son criterios *lógico deónticos* de la justificación epistemológica de la decisión probatoria.

Las reglas del sistema de sana crítica forman un perfecto umbral *lógico deóntico de la justificación del razonamiento probatorio*, es decir, las reglas de la sana crítica son criterios *lógico deónticos* de justificación epistemológica de la decisión probatoria. Lo cual implica que la justificación de la decisión probatoria está en función a las reglas de la lógica (principios que la sustentan), regla de las máximas de experiencia (juicios inductivos) y regla de los conocimientos científicos, etc.

El fin de la valoración de la prueba a través del *sistema de sana crítica racional* radica en establecer –alcanzar– la *verdad de los hechos*: es decir, al juez se le impuso el *deber ser* de fundamentar y justificar su decisión epistemológica a efectos de alcanzar la verdad de los hechos; La prueba de la verdad –verdad de los hechos– es la *expresión objetiva de los hechos comprobados y/o verificados* mediante la prueba de los hechos. Lo contrario o lo opuesto a la verdad indudablemente es la *falsedad* (o mentira), lo cual implica que *sana crítica* tiene como *objeto fundamental* la búsqueda de la verdad de los hechos, y esta la alcanza a través de los criterios *lógico deónticos* –reglas de la sana crítica y la razón– de la justificación epistemológica de la decisión probatoria.

Escribe Bentham (1959, p. 10), que "el arte del proceso no es esencialmente otra cosa que el arte de administrar las pruebas", por lo tanto, escribe Devis Echandia (1981, p.10), "la prueba da carácter al proceso", y este, es el único medio para alcanzar la *verdad de los hechos*, en tal sentido, sería insulso e incluso irracional que en un "proceso justo" la decisión –sentencia– del juez o tribunal se fundamente solo en las elucubraciones de las partes y pruebas sin convicción.

El juez racional decide sobre los *hechos afirmados* en un caso concreto, es decir, el juez *no* juzga sobre elucubración de hechos –hechos cualquiera– "opinión de hechos": por ejemplo, en un proceso: "A" demanda a "B", naturalmente, el juez racional solo decidirá sobre los *hechos afirmados* que condicen solo con la *prueba de los hechos*, y este, aportada en el proceso legalmente.

La prueba de los hechos en el proceso tiene la finalidad de llegar a la verdad de los hechos; al respecto, Ferrer Beltrán (2021, p. 17) refiere, que existe una "relación teológica entre la prueba y verdad, de modo que la verdad se configura como el objeto institucional a alcanzar mediante la prueba en el proceso judicial" y administrativo.

El concepto de verdad en juego, que resulta útil para dar cuenta de esa relación teológica, es el de verdad como correspondencia, de modo que diremos que un enunciado factico (formulado en el proceso judicial y sometido a prueba) es verdadero si, y solo si, se corresponde con lo sucedido en el mundo (externo al proceso) (Ferrer Beltrán, 2021, p. 18).

El juez racional e independiente conoce de una descripción sintética de hechos objetivos y de un acervo probatorio en un caso concreto, en tal sentido: los enunciados facticos deben ser verificados y corroborados a través de la prueba de los hechos, lo cual llevara al juez y/o tribunal adoptar una decisión en *función a la verdad de los hechos*.

Por otro lado, –en materia penal-, un feminicidio, no es exactamente un hecho, sino un conjunto de hechos ante el cual el juez racional debe establecer –a través de la prueba- el grado de *fiabilidad* y *certeza*. En caso de existir duda sobre la culpabilidad del acusado –*In Dubio Pro Reo*-, hay que absolver. En tal sentido, el juez o tribunal tiene *conocimiento sobre los hechos* afirmados – debidamente corroborados y contrastados con la prueba de los hechos– en el proceso, lo cual se comprenderá como el *convencimiento* del juez sobre el caso en concreto.

- 1) Los femicidios tienen lugar en contextos emocionales fuertes dominados por el odio de género que siente el agente hacia la mujer que mata. Esto no excluye el carácter *intencional* de la acción «X mató a Y», sino que, al contrario, el odio es determinante de la *intención*. Los *hechos externos* como «dar muerte a una mujer» se prueban a partir de la observación empírica y de inferencias a partir de ella. Por ende: Para que la muerte de una mujer «Y» odiada por un agente «X» sea feminicidio, la acción «X mató a Y» debe ser *intencional*.
- 2) En los femicidios el *odio de género* hacia la víctima determina la intención del agente de matarla. Por tanto, el problema de la responsabilidad por la acción «X mató a Y» incorpora, en estos casos, al problema de la atribución del odio. ¿Cómo se atribuyen acciones emocionales? A partir de la conducta externa del agente y de las circunstancias contextuales del caso (el *modus operandi* y el tipo de violencia que usó X para matar a Y, el contexto de la muerte, las circunstancias de la muerte, la disposición del cuerpo, el resultado de la autopsia, los antecedentes de violencia género entre X y Y, la conducta anterior y posterior del agente, datos relevantes sobre la vida del agente como sus intereses, sus opiniones, ideas, creencias, relaciones familiares, laborales y sociales) debemos *inferir* el odio: «la mató por el hecho de ser mujer o por razones de género». Lo que nos permite

pasar de la descripción de la acción: «X mató a Y» a la atribución del odio: «X mató a Y *por el hecho de ser mujer o por razones de género*» son las máximas de experiencia ¿Cuál es el fundamento de esas máximas de experiencia? Como todas las máximas de experiencia su fundamento es el pasado: si en el pasado los criterios usados para atribuir acciones emocionales han resultado provechosos no hay razones para pensar que no vayan a continuar siéndolo en el futuro. De ahí su corrección en el juicio de atribución. ¿Es esto suficiente? Para que la hipótesis que atribuye odio a la acción «X mató a Y» quede *suficientemente* probada debe ser sometida a *refutación* con hipótesis alternativas. En este proceso, los argumentos basados en la *coherencia de la narración* de los hechos es muy relevante. Por tanto: Para que el homicidio de una mujer «Y» sea femicidio deben encontrarse razones suficientes que permitan inferir la *motivación* basada en el odio de género que tuvo un agente «X» para matar a la mujer. (Ricaurte, 2022)

Para responsabilizar a una persona por el delito de Femicidio –o Feminicidio– en un caso en particular: el juez o tribunal deberá estar convencido y probar que: 1) X mató a Y *intencionalmente*; 2) que el *motivo* de esa acción fue el odio que le tenía X a Y *por el hecho de ser mujer o por su condición de género*. (Ricaurte, 2022)

VI. CONCLUSIÓN

El femicidio fue acuñada por el feminismo en 1976 con el fin de erradicar el asesinato violento de mujeres, por su condición de mujeres. Esta concepción es utilizada de maneras muy diferentes por las legislaciones de Latinoamérica según criterios políticos, ideológicos y jurídicos que se ajusten según “el momento”. Sin embargo, se debe analizar la situación real de cada uno de las legislaciones, a efectos de este, establecer criterios legislativos técnicos y científicos que establezcan con *objetividad la responsabilidad* del hombre cuando cometa un delito de femicidio en razones de género y motivados por el odio.

La prescripción (Art. 252 Bis del Código Penal Boliviano) normativa identificada, no se aproxima a la definición *primigenia de feminicidio*, más bien, las tergiversan y generan problemas de interpretación en la sociedad (Art. 252 del Código Penal Boliviano). Por lo visto, esto genera incertidumbre e inseguridad jurídica, y debe resolverse por la precisión técnica y jurídica del legislador en la creación de la norma que formule el delito de feminicidio y asesinato en Bolivia. Y que, además, en el Estado Plurinacional de Bolivia, se debe generar una *Ley de Género Integral Contra la Violencia* en la que se incluya a los hombres como seres *humanos que requieren de protección*. Este criterio se sustenta, en la *ola de odio* expresada por mujeres hacia los hombres por su *condición de hombres*. Solo basta con salir a las calles de la Ciudades de Bolivia el 8 de marzo, donde un grupo de mujeres agreden e insultan a los hombres por su condición de género. Y que además, en Bolivia, se ha incrementado el asesinato de

hombres por mujeres (Novias, conyugues y convivientes, etc.).

La imprecisión del legislador boliviano al establecer que “solo *matar a una mujer*” es signo de *Feminicidio*, genera incertidumbre jurídica; la feminización del Derecho Penal boliviano contradice las razones del Derecho penal y las garantías mínimas otorgadas al acusado para defenderse en un proceso justo. El feminicidio en Bolivia –en su tipificación– tiene matices políticos e ideológicos (ya que fue propuesto solo por feministas y no por juristas), por lo cual, no se puede determinar científicamente si las razones de muerte de las mujeres son por *asesinatos misóginos por su condición de mujer*. Sin embargo, existe un aumento de muerte de mujeres (asesinado por hombre) – y hombres (asesinado por mujeres)– por circunstancias diferentes a las establecidas por la teoría del femicidio como conceptualización primigenia propuesta por el feminismo. Considero que la importancia y las razones suficientes, serían, en todo caso, establecer que el femicidio –o feminicidio– es el *asesinato misógino a una mujer por su condición de mujer –género–*.

La valoración de la prueba en los procesos de feminicidio debe estar alejada de sesgos, como por ejemplo, el sesgo de “perspectiva de género”, o criterios normativos que limiten el ejercicio del razonamiento probatorio del juzgador. La libre valoración de la prueba permite que el juez acuda a un estándar flexible (pero efectivo) y a la epistemología para determinar y establecer la certeza y fiabilidad de la prueba de los hechos que han sido producidos en el proceso. No se debe confundir la *libre valoración de la prueba* con arbitrariedad del juez, el principio de la *libre valoración* ha liberado al juez de las reglas de la prueba legal (*liberado de la estrictez legal*), pero no lo ha desvinculado y liberado de las reglas de la razón, la lógica, de la *garantía de interdicción de la arbitrariedad y la responsabilidad* (Cusi Alanoca, 2022).

La expresión “libre” hace referencia a que el juez no se encuentra sometido al *sistema legal de valoración* de la prueba y tampoco está sometido a sus propias convicciones, es decir, la libre valoración de la prueba solo se entenderá cuando el juez tiene la libertad de apreciación conforme el umbral que establece *las reglas del sistema de sana crítica racional*. La *valoración libre de la prueba* debe ser razonada conforme las reglas del sistema de sana crítica racional y la razón (Cusi Alanoca, 2022).

Finalmente, el *sistema de sana crítica* a través de sus reglas no permite la arbitrariedad, discrecionalidad e irreflexiva valoración de la prueba. Las reglas de la sana crítica limitan la posibilidad de que el juez valore la prueba de forma arbitraria, y en este sentido, vaya en contra la *lógica deóntica*; ya que el examen justificativo de la decisión probatoria demostrara si el juez o tribunal cumplió o no con los principios de la lógica –y la razón– y el Derecho (ley).

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Contemporary Challenges in Implementing Smart Contracts: A Holistic Approach

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Abstract- The focus of this study is the use of Smart Contracts in the administration of legal documents, with the aim of examining the level of legal certainty resulting from their implementation. How could smart contracts bring legal certainty to an agreement between parties? Possible obstacles to the widespread adoption of smart contracts, such as the limited accessibility of the technology to society in general, will be recognized. Finally, it aims to elucidate how smart contracts can bring legal certainty to the parties involved and examines their relevance in contemporary society. Although the advantages they bring are recognized, there is a valid concern about the possible exclusivity of access to this technology, thus restricting its availability to more knowledgeable individuals with greater resources.

Keywords: smart contracts; legal security; blockchain; contracts.

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CONTEMPORARY CHALLENGES IN IMPLEMENTING SMART CONTRACTS A HOLISTIC APPROACH

Strictly as per the compliance and regulations of:



Contemporary Challenges in Implementing Smart Contracts: A Holistic Approach

Desafios Contemporâneos na Implementação de Contratos Inteligentes: Uma Visão Holística

Pedro Henrique Willimann dos Anjos ^α, Jociane Machiavelli ^σ, Sabrina Frigotto ^ρ, Levi Hülse ^ω
& Anderson Antônio Mattos Martins [¥]

Resumo- O foco do presente estudo é a utilização de *Smart Contracts* na administração de documentos legais, com o objetivo de examinar o nível de segurança jurídica decorrente de sua implementação. Como os “*smart contracts*” poderiam trazer segurança jurídica em um acordo entre partes? Serão, portanto, reconhecidos os possíveis obstáculos à adoção generalizada de contratos inteligentes, como a acessibilidade limitada da tecnologia para a sociedade em geral. Por fim, visa elucidar como os contratos inteligentes podem trazer segurança jurídica às partes envolvidas e examina sua relevância na sociedade contemporânea. Embora se reconheçam as vantagens que trazem, é válida a preocupação com a eventual exclusividade de acesso a esta tecnologia, restringindo assim a sua disponibilização a indivíduos mais conhecedores e com maiores recursos.

Palavras-chave: *smart contracts*; segurança jurídica; blockchain; contratos.

Abstract- The focus of this study is the use of Smart Contracts in the administration of legal documents, with the aim of

examining the level of legal certainty resulting from their implementation. How could smart contracts bring legal certainty to an agreement between parties? Possible obstacles to the widespread adoption of smart contracts, such as the limited accessibility of the technology to society in general, will be recognized. Finally, it aims to elucidate how smart contracts can bring legal certainty to the parties involved and examines their relevance in contemporary society. Although the advantages they bring are recognized, there is a valid concern about the possible exclusivity of access to this technology, thus restricting its availability to more knowledgeable individuals with greater resources.

Keywords: *smart contracts*; legal security; blockchain; contracts.

I. INTRODUÇÃO

Os contratos fazem parte da sociedade humana há milênios, com as pessoas concordando com eles de várias formas, como escritas em papel, verbais ou por meio do sistema de troca (Bueno, 2020).

É um desafio identificar com precisão o momento em que essa instituição surgiu. O que se sabe, no entanto, é que os contratos estão presentes desde os primórdios da civilização humana, quando as pessoas começaram a interagir e conviver em comunidades. A partir daí, os contratos foram utilizados como o principal meio de troca de riqueza (Borges, 2018).

A definição de *smart contract* foi feita há muito mais tempo do que é imaginado, sendo criada em 1994 por Nick Szabo, porém, congelada até a criação do *blockchain* e da *bitcoin* em 2008, o qual em um contexto de crise imobiliária em que contas bancárias estavam sendo violadas, foi criada para que as transações não tivessem intervenção de terceiros, o que deu possibilidade para que os *smart contracts* tivessem uma área de atuação (Nakamoto, 2008).

A adoção gradual de contratos inteligentes ao longo do tempo resultou num número crescente de adeptos. Tornou-se claro que a lei não poderia permanecer passiva em resposta a este desenvolvimento. Cabia ao legislativo compreender e expor esta instituição inovadora. A lei serve de base às relações pessoais e seria negligente não explorar este novo fenômeno (Bueno, 2020).

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Existem empecilhos os quais podem impedir que a proliferação dos contratos inteligentes seja incrivelmente rápida, apesar de ser tecnologia de ponta. Sua adoção, embora tenha o condão de trazer diversos benefícios, não atinge toda a sociedade, sendo de certa forma elitizada para pessoas que detêm mais informação e acesso à essa esfera da tecnologia. Esta pesquisa, portanto, busca esclarecer como os contratos inteligentes trariam segurança jurídica para as partes e como poderiam ser aplicados na sociedade atual (Bueno, 2020).

II. METODOLOGIA

Acerca do método de pesquisa a ser utilizado aplicar-se-á o dedutivo, o qual Zanella (2011) descreve como, o que envolve o raciocínio lógico, no qual um resultado específico pode ser extraído de uma série de fatos presumidos. O tipo da pesquisa utilizado será o qualitativo, em que uma análise de dados é considerada científica se for baseada em conhecimentos empíricos e teóricos, sem nenhum instrumento estatístico. Conta também com análise bibliográfica.

a) As Características e a Problemática dos Smart Contracts

Os acordos contratuais são regidos por diversos princípios, como obrigação vinculativa, boa-fé e consentimento, visando garantir a execução segura de obrigações mútuas e promover uma função social. Os contratos inteligentes, ou Smart Contracts, foram desenvolvidos para simplificar e fortalecer a negociação e execução de contratos, eliminando a necessidade de linguagem formal e reduzindo o esforço necessário para sua elaboração. Além disso, apresentam custos mais baixos tanto na formalização quanto na execução (Regert, *et al.*, 2021).

Os contratos inteligentes carecem atualmente de regulamentação legal específica e, portanto, estão sujeitos às diretrizes gerais da lei, que dependem do objeto e da finalidade do contrato. Como resultado, são considerados atípicos e devem aderir às disposições legais cabíveis. Apesar do estudo nessa área, não existe consenso entre os especialistas relativamente aos traços e características distintivos dos contratos inteligentes, e a maioria destes contratos ainda está em revisão (Divino, 2019).

Divino (2019, p. 19) traz algumas características acerca dos contratos inteligentes:

- 1) Forma eletrônica: para Savelyev inexistente contrato inteligente senão na forma eletrônica, sendo impossível utilizar-se de outra forma para ensejar sua formação. Fato esse compatível com o inicialmente idealizado por Szabo. A necessidade de assinaturas ou chaves digitais das partes, forjadas em tecnologias de criptografia, constitui elemento desse tipo contratual.
- 2) Transcrição e execução em Hardware e Software: por ser redigido em algoritmos ou

outra linguagem computacional apta para tanto, torna-se necessária a existência de um software para programação da linguagem previamente acordada e pactuada entre as partes e de um hardware para iniciar a execução do acordo eletrônico.
- 3) Maior chance/nível de certeza de adimplemento: em tese, excluídas ou reduzidas as possibilidades de interpretação e ambiguidade intrínsecas da língua natural, o conjunto computacional executará o contrato inteligente inicialmente esboçado sem qualquer discricionariedade ou interferência humana. Os contratos inteligentes devem ser acordos autônomos não sujeitos à interpretações por entidades fora da relação contratual ou jurisdições externas; o próprio código deverá ser o arbítrio final do pacto representado.

O primeiro aspecto a considerar é o Formulário Eletrônico. Esta tecnologia necessita de chaves ou assinaturas digitais de todas as partes envolvidas, forjadas através de técnicas de criptografia. Portanto, a formação de Contratos Inteligentes só pode ser alcançada por meio eletrônico, sendo o Formulário Eletrônico um componente fundamental para a existência de Contratos Inteligentes.

A segunda característica a ser abordada é a transcrição e execução em hardware e software. Como a operação de Contratos Inteligentes depende da escrita de algoritmos ou outras linguagens computacionais que possam executá-los, é necessário um software capaz de interpretar a linguagem de programação acordada. Além disso, é necessário hardware para iniciar a execução do contrato eletrônico (Dantas, 2022).

Dantas (2022, p. 44) traz a sua visão sobre as características supracitadas:

[...] Por ser executado de maneira autônoma e em linguagem de programação, os Smart Contracts deixam mínimas ou sequer inexistentes as margens para interpretações e ambiguidades quando comparado a um contrato escrito com linguagem humana tornando assim a taxa de certeza do adimplemento extremamente próxima de seu limite. [...] em razão de sua linguagem de programação, é preciso que declarações condicionais sejam arranjadas em ordem de se possibilitar a execução dos Smart Contracts. Um exemplo destes termos condicionais são: Se A pagar o valor a B, então X deverá entregar o produto ou serviço a Y. Ou seja, se realizado evento anterior previsto, o código realizará automaticamente a ação posterior na qual fora previamente programado.

Sobre o cumprimento do acordo e o processo de confiança necessário no decorrer do *smart contract*, aborda Divino (2019, p. 21) duas outras características:

- [...] 6) Cumprimento e execução imperativos: uma das diferenças substanciais, se comparado ao contrato tradicional, é a possibilidade de cumprimento e execução forçados da obrigação em caso de adimplemento ou inadimplemento de uma determinada condição pré-estabelecida. Após realizadas as tratativas iniciais com a eventual transcrição do pacto em linguagem da computação, a execução desse negócio jurídico independe

da vontade das partes e dispensará posteriores verificações, aprovações ou ações dos envolvidos ou de terceiros. Nessa situação descrita, em tese, os Smart contracts seriam à prova de inviolabilidade (tamper-proof). [...] 7) Dispensa-se confiança (trustless): partindo da premissa que um contrato inteligente será executado numa rede de Blockchain, afirma-se pela eliminação da necessidade de as partes confiarem entre si ou em intermediários. Porém, o simples fato de algo se conectar no Blockchain ou realizar transações dentro de um block não significa que esse algo se torne algo que dispense confiança; colocar um contrato inteligente no Blockchain não significa retirá-lo do espectro negocial da confiança. Nas transações realizadas no Blockchain deverá existir pelo menos uma parcela de confiança nos usuários que irão autenticar as solicitações das partes e eventuais consequências ocorridas na relação contratual, dificultando, portanto, a incorporação dessa característica nos Smart Contracts.

A divergência significativa entre Contratos Inteligentes e contratos convencionais pode ser atribuída à sua sexta característica, a imperatividade. O cumprimento e execução das obrigações previstas são determinados por condições pré-estabelecidas, que estão programadas no Contrato Inteligente. Como resultado, as partes envolvidas não são obrigadas a fornecer o seu consentimento ou a solicitar aprovações/ações de terceiros (Dantas, 2022).

Para Pamplona Filho e Gagliano (2022), antes de iniciar um processo de negociação, é imperativo verificar se foi estabelecida ou não uma perspectiva genuína de celebração de um contrato, dependendo da situação específica. É importante notar que alegar a ausência de um direito subjetivo de não contratar não nega a obrigação de compensar os danos resultantes. Isto porque, como referido anteriormente, apesar das lacunas da norma positiva, o princípio da boa-fé objetiva também se aplica durante a fase pré-contratual, nomeadamente no que diz respeito às responsabilidades suplementares de confiança e lealdade mútuas.

Entretanto, como nada é simples e belo, trata Bueno (2020, p. 38) sobre as problemáticas para a aplicação dos contratos inteligentes:

Como visto anteriormente, mesmo existindo a possibilidade de serem utilizados, ainda são muitos os problemas enfrentados por esta forma de contrato. Devido ao fato de serem escritos em código, ainda é difícil imaginar seu uso em situações em que o contrato contenha subjetividade.

Analisando o estado atual da humanidade, onde a tecnologia avança desenfreadamente, fica quase impossível de se perceber os contratos inteligentes em coisas palpáveis para toda a sociedade, mas apenas para aquela qual possui a condição e o conhecimento privilegiado acerca de tecnologias de última geração (Bueno, 2020).

Ao considerar a questão da inclusão social Lorenzetto e Morbini (2023) destacam que é importante

abordar o acesso a contratos inteligentes. Um ponto de discórdia neste discurso é como aumentar a eficiência dos contratos inteligentes quando o acesso à Internet não está prontamente disponível para as massas. Seria correto argumentar que o acesso atual leva à dignidade digital e, portanto, à dignidade humana? A importância das novas tecnologias, como os contratos inteligentes, para o progresso social não pode ser exagerada. Estas tecnologias promovem a liberdade de expressão e informação e são vitais para o desenvolvimento das pessoas.

A inclusão digital não é apenas um direito fundamental, mas uma ferramenta indispensável para o avanço dos direitos sociais básicos:

Diante dessa relevante quantidade de pessoas sem acesso à internet no Brasil, pode-se afirmar que o cenário ainda está longe do que seria ideal. Para que se possa entender que a inclusão digital irá transmutar a sociedade e tornar os *smart contracts* na ferramenta obrigacional entre partes comumente utilizadas, seria essencial que essa modalidade documental fosse plenamente acessível para todas as pessoas (Lorenzetto; Morbini, 2023, p. 9).

Afirma Levy (2017) que, embora não seja totalmente correto dizer que os contratos automatizados não têm qualquer papel a desempenhar, também não é verdade que tais contratos não possam produzir alguns efeitos socialmente desejáveis no que diz respeito à igualdade de acesso à justiça. Conforme estabelecido anteriormente, uma parcela significativa do não cumprimento de obrigações contratuais decorre do alto custo dos processos judiciais.

Se os contratos inteligentes puderem reduzir estes custos de transação, poderão eliminar com sucesso os obstáculos que dificultam os direitos contratuais das partes com menos recursos. No entanto, a execução automatizada de obrigações contratuais terá quase certamente um impacto negativo sobre os indivíduos com poucos recursos. Isto acontece porque estes indivíduos dependem frequentemente de custos de transação assimétricos para lhes fornecer um “amortecedor” dentro do qual possam operar (Levy, 2017).

Vários exemplos recentes demonstram a utilização de dispositivos interruptores de arranque por credores. Os dispositivos são ativados remotamente e desabilitam instantaneamente o veículo de um indivíduo caso ele atrase nos pagamentos, causando danos significativos ao mutuário (Levy, 2017).

Em jurisdições onde a lei é definida por código, quaisquer erros ou falhas no código tornam-se um aspecto permanente e essencial do acordo. Dito de outra forma, caso haja alguma disposição ilícita, a automação será executada independentemente da violação da lei, operando de forma descentralizada. Este cenário tem levado alguns juristas a questionar a “inteligência” da utilização de contratos inteligentes, uma vez que a sua inteligência está confinada ao

programador do código e não têm existência independente. O fato de serem imutáveis também levanta questões significativas em determinadas situações (Pereira; Silveira, 2022).

Ao considerar a implementação de contratos inteligentes, é crucial analisar e avaliar o contexto social em que irão operar. Isto inclui examinar até que ponto os contratos inteligentes podem limitar outras formas de cumprimento de obrigações, bem como as implicações sociais e normativas de tais limitações. O objeto do contrato também é um fator significativo a considerar. Por exemplo, uma negociação de ações pode ser mais adequada para a contratação inteligente devido à verificabilidade dos eventos computacionais que envolvem a transação. No entanto, mesmo os contratos de produtos financeiros podem ser complexos e é melhor deixá-los intencionalmente incompletos (Levy, 2017).

Para concretizar plenamente os benefícios potenciais dos contratos inteligentes e, ao mesmo tempo, mitigar possíveis inconvenientes, é essencial incentivar a discussão aberta, o desenvolvimento e até mesmo a regulamentação dos contratos inteligentes nos contextos relacionais em que são implementados (Levy, 2017).

b) Os Smart Contracts no Ordenamento Jurídico Brasileiro

Antigamente, um contrato era apenas um pacto falado. Mais tarde, as pessoas começaram a escrevê-los em pergaminhos. Depois disso, a tinta e as máquinas de escrever foram introduzidas e o conceito de contrato sofreu muitas alterações. Mas agora estamos em uma nova era da tecnologia e isso trouxe a criação de contratos inteligentes usando a tecnologia *Blockchain* (Pereira; Silveira, 2022).

No ordenamento jurídico brasileiro não há uma prática clara de democratização por meio de acordos contratuais. Os acordos contratuais tradicionais não são acessíveis a todos e muitas pessoas recorrem a acordos verbais ou “contratos de gaveta” devido à falta de compreensão das questões contratuais. Infelizmente, estes acordos informais conduzem frequentemente a promessas não cumpridas e a litígios que são difíceis de resolver na via judicial (Coelho, 2022).

Após extensa análise, foi determinado que os contratos inteligentes necessitam de legislação especializada devido às suas características únicas que se desviam significativamente dos contratos tradicionais. Apesar de serem reconhecidos pelo ordenamento jurídico brasileiro como uma forma válida de contratação, determinados contratos inteligentes violam princípios fundamentais, tornando-os nulos e sem efeito (Torres, 2021).

O contrato inteligente difere de um acordo contratual típico, pois é inalterável, o que significa que

qualquer parte que pretenda rescindir o contrato e levar sua disputa ao tribunal pode ter seu caso arquivado devido à imutabilidade do contrato inteligente. Devido a isso, parece que os contratos inteligentes não seriam adequados para uso em acordos legais que dependem de fatores variáveis ou estão sujeitos a circunstâncias imprevistas, limitando assim sua aplicação a esse respeito (Pereira; Silveira, 2022).

Retrata Bueno (2020, p.34), uma semelhante linha de pensamento:

Logo, são classificados como contratos atípicos, por não ter sua forma expressa em lei, uma vez que de acordo com o Art. 425 do Código Civil Brasileiro, é lícito as partes realizar tais formas contratuais desde que observadas as normas gerais de direito, como segue: “Art. 425. É lícito às partes estipular contratos atípicos, observadas as normas gerais fixadas neste Código”.

Uma das principais razões para a utilização limitada de contratos inteligentes é a ambiguidade jurídica que os rodeia, que parece estar ligada a uma lacuna legislativa específica. A relutância dos legisladores em tomar as medidas necessárias resultou numa hesitação entre os usuários em se envolverem em contratos baseados em blockchain (Torres, 2021).

A falta de legislação específica parece ser um fator significativo que contribui para a baixa taxa de adoção de contratos inteligentes. Esta insegurança jurídica é resultado da inércia do poder legislativo, que afasta os usuários de utilizar redes blockchain para fins de contratação (Torres, 2021).

c) Os Obstáculos à Adoção de Contratos Inteligentes

Para Coelho (2022), a dificuldade em conseguir contratos que ofereçam maior segurança às partes envolvidas decorre da necessidade de um profissional fornecer as orientações necessárias a ambas as partes. Além disso, muitas vezes é necessário que uma figura de autoridade confiável supervisione os procedimentos e seja responsável por quaisquer incidentes inesperados que possam surgir. Estas necessidades acabam por levar à transformação dos contratos em algo que não é facilmente alcançável por uma parcela significativa da população devido aos custos e complicações associados.

Esse resultado é a utilização persistente de contratos que possuem baixos níveis de segurança e são difíceis de executar:

Desta forma, a difusão dos contratos inteligentes poderia representar o barateamento dos meios de contração que, por sua onerosidade, culminam em relações contratuais inseguras por falta de confiança e devido aconselhamento. Por sua vez, o barateamento dos custos inerentes ao contrato pode permitir, para além de um maior acesso a contratos seguros, mas também pode representar maiores possibilidades de aquisição de produtos e serviços (Coelho, 2022, p. 44).

Na visão de Torres (2021), há uma deficiência de especialistas nas áreas computacional e jurídica que

possuam um conhecimento adequado da tecnologia blockchain. Esta falta de conhecimento resulta na incapacidade de utilizar contratos inteligentes em diversas áreas devido à falta de estabelecimento de uma relação entre os dois campos.

Sobre a problemática da falta de profissionais especializados, trata Torres (2021, p. 65):

Vale ressaltar que os profissionais do ramo jurídico principalmente e os profissionais da computação formam a base para uma aplicação clara e segura dos contratos inteligentes e, inexistindo, concretizam a limitação de sua aplicabilidade, figurando como um instituto pouco estudado e esquecidos pelos profissionais. Sendo assim, a falta de conhecimento acerca dos contratos inteligentes, muito em vista sobre suas peculiaridades, a qual, a escrita em códigos computacionais e o meio tecnológico empregado, mostra-se como um instituto distante da aplicação pelos sujeitos supracitados.

A lenta adesão aos contratos inteligentes pode ser atribuída a vários fatores, um deles, por óbvio, a limitada integração tecnológica na sociedade atual. Existe uma falta de conhecimento e experiência nas áreas computacional e tecnológica, com uma maioria significativa não utilizando nem mesmo os mecanismos tecnológicos mais básicos. Isto tem contribuído para a falta de entusiasmo e popularidade na implementação de contratos inteligentes, uma vez que o Brasil apresenta maior lentidão na adoção de mecanismos tecnológicos, em comparação a países como a China e os EUA (Torres, 2021).

Os contratos inteligentes são amplamente considerados como uma forma de contrato segura e criptografada, devido à sua natureza inalterável e execução automática. Contudo, isto significa que o princípio da autonomia da vontade, que rege os contratos tradicionais, é violado nas situações em que há necessidade de modificação do contrato. Nenhuma das partes pode alterar o contrato de acordo com a sua vontade após a sua criação, e este é executado mesmo que contrarie a vontade das partes. Isto limita a capacidade de negociar de acordo com a vontade e ficam vinculados aos termos que foram inicialmente estabelecidos. Uma vez atendida uma determinada condição, o resultado será dado independentemente de quaisquer circunstâncias (Torres, 2021).

Para Ito e Santos (2020) os contratos inteligentes podem enfrentar limitações ao lidar com contratos operacionais complexos. A simplicidade necessária na construção da relação de causalidade do código pode dificultar a implementação de contratos inteligentes nestes casos. Por exemplo, em contratos que requerem intervenção humana na supervisão contratual para uma medição adequada, o contrato torna-se altamente sensível ao contexto factual da relação econômica. Este cenário aparece frequentemente em contratos de trabalhos ou serviços técnicos. Embora os contratos inteligentes ainda

possam proporcionar um ganho de produtividade tanto para contratos parcialmente automatizados quanto para contratos mais complexos, eles não podem produzir mudanças significativas nos processos de gestão envolvidos nas compras públicas brasileiras.

Estes acordos colocam ênfase apenas nos aspectos técnicos do contrato, desconsiderando os intrincados fatores sociais e contextuais que moldam as formas como os contratos são utilizados. Consequentemente, os contratos inteligentes estão restritos apenas aos termos contratuais (ou seções de contratos mais longos) que podem ser expressos usando a lógica booleana (Nobrega; Cavalcanti, 2020).

Na visão de Torres (2021), deduz-se que a barreira que impede o progresso decorre da ampla desaprovação dirigida à nossa nação, um país emergente, que não está habituado aos avanços e inovações tecnológicas. Esta questão é ainda mais exacerbada quando é trazida para o domínio econômico e comercial, como evidenciado pela atual implementação de contratos inteligentes.

O principal obstáculo que surge no domínio dos contratos inteligentes é a questão da especificidade das cláusulas contratuais, como aborda Torres (2021, p. 65):

O primeiro empecilho se dá no que tange a especificidade das cláusulas contratuais, a qual, o contrato inteligente é determinístico, uma vez elaborados suas cláusulas este executaram de forma automática, não podendo alterá-los, chegando a sua finalidade específica. Ocorre que, os contratos fazem referência ao mundo externo, permeado de subjetividade e interpretações, assim, o maior desafio dos contratos inteligentes se dá quanto a codificação de execução automática de uma vontade extremamente subjetiva e incerta, sendo inimaginável sua aplicação em situações complexas que necessitam de interpretação específica, analisando os pormenores da vontade dos sujeitos.

O significado por trás do acordo contratual dependeria do desenvolvimento da fase de um contrato inteligente sendo exclusivamente automatizado, para uma fase em que poderia haver permissão, mesmo por meio de programação, para dar sentido às situações do mundo externo. Para conseguir isso, seria essencial utilizar extensas bases de dados e inteligência artificial para garantir que os contratos inteligentes seriam verdadeiramente benéficos numa sociedade em maior escala. Caso contrário, poderão ficar restritos a empresas menores ou a mercados específicos, uma vez que quanto mais complexa for a questão jurídica, maiores serão as oportunidades para a interpretação jurídica (Rodrigues; Teixeira, 2019).

Considera Torres (2021) a natureza complexa da compreensão dos termos e condições de um contrato, não é incomum que o resultado real se desvie do que foi originalmente previsto. Isto pode representar um desafio na implementação de contratos inteligentes,

que, quando formulados, podem levar a resultados imprevistos quando confrontados com cenários contratuais complicados. Como resultado, a execução do contrato pode levar a uma conclusão diferente da inicialmente prevista.

d) Custos

Ao criar contratos inteligentes, normalmente utiliza-se uma plataforma de criptomoeda como o Ethereum. As criptomoedas operam de maneira descentralizada, permitindo que os usuários interajam com a moeda virtual por meio de um banco de dados compartilhado globalmente. Os usuários participam de transações e interagem com contratos publicando dados assinados, conhecidos como transações de rede de criptomoeda. A rede é composta por mineradores, que divulgam informações, armazenam dados e atualizam o livro-razão por meio da implementação de transações (Coutinho *et al.*, 2020).

Acredita-se que até que seja alcançada a adaptação completa ao método moderno de obtenção de acordos, persistirá um sistema híbrido de contratação. Este sistema envolve escritórios de advocacia que aperfeiçoam contratos inteligentes e, ao mesmo tempo, mantêm cópias físicas como prova, se necessário, gerando um custo “dobrado” (Pereira; Silveira, 2022).

Uma visão crucial a ter em conta, trazida por De Oliveira (2022) são as consequências que podem surgir da utilização extensiva de contratos inteligentes e da tecnologia blockchain. Especificamente, a possibilidade de melhores transações digitais com redução de despesas, o que pode trazer transformações na própria natureza das empresas e nas suas correspondentes teorias de gestão.

Além disso, os contratos inteligentes possuem o potencial para servir como agentes de crescimento social. Isto se deve à sua capacidade de diminuir despesas incorridas pelas empresas, agilizar a implementação de contratos e garantir a sua eficácia, independentemente da posição social dos indivíduos envolvidos (Lorenzetto; Morbini, 2023).

Atualmente, encontra-se a situação mais irônica em relação à conversa em torno da inexistência de despesas em contratos inteligentes:

1) Taxatividade das cláusulas: como o contrato eletrônico executará apenas aquilo que ele foi programado, será indispensável taxar e elencar o maior número de situações que eventualmente poderão acontecer no transcurso da execução contratual. Sabe-se que, inclusive para os contratos tradicionais, isso é logicamente impossível. Existem diversas situações jurídicas e econômicas que poderão influenciar no cumprimento da obrigação que estão aquém da possibilidade de prevê-las e elencá-las em um programa de computador. No mais, o sistema de software representa uma limitação em razão de sua natureza condicional. Após o adimplemento ou inadimplemento de um determinado número de condições

postas para selecionar a próxima ação, poderá ocorrer erros e bugs, tornando seu cumprimento inviável. Situações envoltas de uma ação omissiva de uma parte, como por exemplo o sigilo profissional, seria extremamente trabalhoso, quiçá impossível, codificar essas possibilidades (Divino, 2019, p.26).

O custo de tentar antecipar todos os cenários possíveis e a inadequação do poder computacional para executá-los plenamente provavelmente excederão o custo dos contratos convencionais (Divino, 2019).

e) A influência da utilização de inteligência artificial em acordos jurídicos

À medida que os contratos evoluíram ao longo do tempo, surgiu um novo formato, culminando na realidade atual da expressão da vontade por meios digitais. O papel das testemunhas foi suplantado pela inteligência artificial, as transações em papel agora dão lugar às digitais. Assinaturas eletrônicas e acordos autoexecutáveis são agora a norma. Inevitavelmente, o Judiciário será acionado para dirimir as controvérsias oriundas desses contratos inteligentes (Peck, 2016 *apud* Pereira; Silveira, 2022).

Trata Hohenstein (*et al.*, 2023) sobre estudo realizado acerca de teorias sobre o impacto da comunicação mediada por computador na manutenção de relacionamentos e na intimidade. Foi formulada uma hipótese que propunha que a apresentação de sugestões de respostas geradas por Inteligência Artificial poderia potencialmente afetar o sentido de ligação dos participantes com o seu parceiro de conversação.

De acordo com a investigação, a utilização de IA generativa, incluindo um sistema de IA implementado comercialmente, pode ter um impacto significativo na forma como as pessoas se comunicam. Esse impacto pode ser tanto positivo quanto negativo. As descobertas mostram que as pessoas tendem a optar pela IA quando têm oportunidade, levando a um modo de comunicação mais rápido e ao uso de uma linguagem emocionalmente positiva. No entanto, também foi descoberto que os participantes percebiam o seu parceiro como menos cooperativo, menos angustiado e mais dominante quando suspeitavam de respostas algorítmicas. Isto pode ser atribuído a suposições generalizadas sobre as implicações negativas da IA nas interações sociais (Hohenstein, *et al.*, 2023).

As descobertas de Hohenstein (*et al.*, 2023) demonstram as implicações sociais imprevistas que podem surgir de um sistema de IA destinado a ajudar indivíduos. Embora a IA tenha a capacidade de agilizar a comunicação e melhorar a percepção interpessoal no discurso diário, o estudo alerta que estas vantagens estão interligadas com a modificação dos componentes emocionais da nossa linguagem, e os potenciais impactos que estas mudanças poderiam ter nos padrões de comunicação permanecem incertos.

Por fim, apesar da crescente popularidade dos Contratos Inteligentes, a sua utilização no campo jurídico permanece numa fase inicial, com pesquisas e estudos limitados. Os resultados indicam que o atual nível de desenvolvimento da tecnologia só permite sua aplicação em transações jurídicas simples, que exigem detalhes mínimos e são de fácil execução. É mais provável que os contratos inteligentes sejam adotados por segmentos específicos da sociedade e não pelas massas, restando apenas à evolução da tecnologia e da sociedade humana em conjunto para que possam ser aplicados com seu objetivo principal, sem que saiam as partes com qualquer lesão jurídica (Bueno, 2020).

III. CONSIDERAÇÕES FINAIS

É extremamente difícil apurar com exatidão o surgimento dos contratos, embora seja reconhecido que os contratos estão presentes desde o início da civilização humana, quando os indivíduos começaram a interagir e a viver juntos em comunidades.

Os contratos são parte integrante da civilização humana desde o seu início, servindo como um mecanismo crucial para a troca de riquezas, com base na função-social dos contratos. Desempenharam um papel fundamental na facilitação das transações económicas e das relações interpessoais.

O termo "contratos inteligentes" foi inicialmente cunhado por Nick Szabo em 1994, mas permaneceu relativamente adormecido até o advento da tecnologia blockchain e a ascensão da bitcoin em 2008. Dentro dessa estrutura, os contratos inteligentes surgiram como um meio para facilitar transações sem a necessidade de intervenção de terceiros. Esses contratos são formados por meio da tecnologia blockchain e compostos por meio de códigos de programação de computador.

Neste estudo analítico, foi explorado o potencial de utilização da tecnologia em ambientes contratuais, que tem potencial para ser uma inovação disruptiva, aprimorando e unificando os métodos de contratação. Por outro lado, foi examinado o obstáculo da integração desta tecnologia do ponto de vista jurídico, considerando a ausência de regulamentação estabelecida, e examinando como os contratos inteligentes operam dentro do nosso sistema jurídico, sob a orientação dos princípios e leis que são intrínsecos aos contratos convencionais.

Atualmente, a implementação de contratos inteligentes está numa fase inicial a nível mundial, sem que nenhum país os tenha adotado totalmente. São normalmente utilizados para contratos de natureza menos complexa e específica e, como resultado, a sua aplicabilidade é limitada. Esta limitação é ainda agravada pela falta de utilização generalizada, o que dá origem a incertezas e dúvidas quanto à sua viabilidade.

Embora os contratos inteligentes tenham o potencial de revolucionar todo o sistema jurídico, é importante notar que ainda não são amplamente aplicáveis. Apesar de ser uma tecnologia disruptiva, são necessárias discussões legislativas para regular os contratos inteligentes e esclarecer as incertezas que cercam a sua utilização. Só então poderemos apreciar e explorar plenamente as suas capacidades.

Concluindo, é evidente que os contratos inteligentes são um conceito revolucionário que tem o potencial de mudar a forma como os contratos são percebidos globalmente. No entanto, no cenário jurídico do Brasil, implementá-los em larga escala continua a ser um desafio assustador.

Dada a complexidade do assunto e a escassez de informações facilmente acessíveis, prever a adoção generalizada desta tecnologia revela-se uma tarefa complicada. Se tal adoção ocorresse, muito provavelmente ocorreria gradualmente, com a sociedade dando pequenos passos para se adaptar à sua utilização em resposta às necessidades e tendências flutuantes.

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Converging Realities & Flexible Memory Rebuilding upon Socio-tech Shifts: Reflecting on Hippocampal Limbus

By Jesús Aparicio de Soto

Abstract- In our evolving era, memory, technology, and society intersect, prompting a reevaluation of human experience. Adaptive recall systems help navigate the blurred lines between personal and collective realities. This text tackles aging and brain herpes as experience highlighters, emphasizing the need for adaptive strategies and memory-enhancing techniques. Memory relies on automatic processes, with the hippocampus key for episodic reconstructions. Technology enhances cognitive abilities, merging individual and collective understandings, and redefining truth and reality while fostering resilience and adaptability. This study embraces diverse perspectives to enrich our understanding, inviting interconnectedness, creativity, compassion, and new forms of humanism.

Keywords: *memory, technology, adaptation, cognitive flexibility, stress, shared experiences, contextual recall, neuroplasticity.*

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Abstract- In our evolving era, memory, technology, and society intersect, prompting a reevaluation of human experience. Adaptive recall systems help navigate the blurred lines between personal and collective realities. This text tackles aging and brain herpes as experience highlighters, emphasizing the need for adaptive strategies and memory-enhancing techniques. Memory relies on automatic processes, with the hippocampus key for episodic reconstructions. Technology enhances cognitive abilities, merging individual and collective understandings, and redefining truth and reality while fostering resilience and adaptability. This study embraces diverse perspectives to enrich our understanding, inviting interconnectedness, creativity, compassion, and new forms of humanism.

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I. INTRODUCING ADAPTIVE RECALL SYSTEMS

Thresholding our new era: memory, tech, and societal constructs converge. We are compelled to reexamine the fabric of human experience, and the intersections upon how our memory clipping, fidelity and tech-enabled geared up extensions glimpse this unavoidably incoming blur between individual and collective realities! (Worcmán & Garde-Hansen, 2016) Through the lens of personal narratives and philosophical inquisition, we notice the emergence of new forms of mnemonic engagements and collective experiences: a thread of innovative solutions. People with particular memory, more or less ('dis' and over) functional-ties — were we able to describe individual adaptive processing due to standard use, aging and/or whatever-other-brain-(re/a)condition(aments) — mandatorily and implicitly experience such risking-redundancy-particularities: everyday: specially when it comes to remembering!!

Actually, understanding memory in a dynamic and adaptive system needfully implies we essentialize behaviors based on resonant experience. Data input aint facts: they're d'just resembling processing reassemblances. Furthermore, making use of them as humans is an ability we need to always healthily keep

and deploy, just to redundantly be always keeping all of our sustainable-healthy-wellbeing-needs! It allows us to contingently-adapt: seemingly in-frequency and concurrently on to evocative circumstances.

Today's convergence of memory, technology, and societal constructs compels us to reexamine human experience, highlighting how adaptive recall systems are essential for navigating the blurring lines between individual and collective realities. I myself had an experience with brain herpes: while managing frequent forgetfulness and anxiety, it allowed me to visualize a gradual understanding of memory-recall difficulties over three years compounded by circumstantial stress, while coping through meticulous note-taking and other adaptive more and less tech strategies. In this sense, my personal approach to these experiences might lend us some sort of phenomenological exploration upon how memory manifests and reconstructs our consciousness. I'll try to re-understand things in a more holistic step-back framework, and comment on my personal journey as i believe somehow makes evident how this universal broad and increasing need for innovative mnemonic strategies and support systems enables effectively coping and adapting to lifestyles, memory changes and challenges in an increasingly complex world, where technology and life span combine and exponentiate.

Despite memory's adaptive nature, hence forward, adopting and learning to deploy mnemonic strategies, requires increasingly continuous innovative approaches, specially for specificities, as usual. Studying how we do so can be done based on functionality if only we open-mindedly navigate challenges: understanding them through the essence of novelty, spontaneity, and rebuilding, as mentioned.

Memory isn't merely reproductive; it operates through contingent, automatic, and functional processes. Actually, studies reveals a crucial role of the hippocampus' in episodic memory (Fortin, Agster & Eichenbaum, 2002). It includes pragmatic encoding, up-to-date storage, contextually emulated retrieval, and back updating mainly for-on-to relearning. And those constructive engagements of our inner brain dynamics allow effective shuffling of neocortical data. Hence, meta-reviewing exhibits some sort of critical-characteristic thread of looped-periodicity, as it

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ensures the continuous refinement and integration of deployment strategies while adapting to new informative experiences: all automated with our every use.

Such constructive nature means memory is being ever-resaped by perceptual contingent expectations and experience. If particularities impact specific aspects like sequences or contexts when recalling – as it does – it needs spontaneous mnemonic rebuilding to become functional, something especially important when usual paths of recollection don't work as usual. Thus, any benefits, drawbacks, considerations

and technological advancements that qualitatively modulate whilst they such or so become – as for memory usage – somewhat more obvious in certain scenarios (Nader et. al. 2013). And thus again, it is by these those same modulators that creativity within memory deployment takes its critical role: pronounced, highlighting any needed abilities to re-adapt and re-construct experiences in and on to re-new our most current meaningful requirements, making clear the essential anchoring our environment and current states provide, and how tech may exponentiate.



Figure 1: Connecting memory evokes circumstantial illusions as it re-renders stored impressions, and of which only the minor part is factual pre-assuming-some-sort-of-reality-content.

Thrice thus more, understanding over-memory functions as adaptive systems allows navigating present and anticipating future: (i.) based on previous past experimental concurrent neural-activation dynamics and any of *ad hoc* topologic reinterpretations; therefore (ii.) based on mainly emotive or pseudo meta-content, and (iii.) trying to push always environmentally suitable isomorphic intuitive functionality modelings – all three deepermore aside divine deceivings or any random coincident ineludible self-linguistic-problematic.– Needless to say and any way forth, the hippocampus works with the amygdala to modulate emo-contextual responses within specific memories and situations. It's essential for us to captivate tech or environmental recalls, and emotional experiences, as influencing how we process and remember.

II. DEFINING MNEMONIC SHAPES ON TECH-IDENTITY

Continuous adjustments mean that memory impairments can often be subtle and undetectable for those who suffer from them, and their environment, moving forward on to anxious dysfunctionalities. Let's take as an example the following quote from Sandi &

Pinelo-Nava's (2007) text regarding stress and neurobiological plasticity:

(...) memory is not only [— if “at-all”—] a repository of past experiences but (...) [a meta] adaptive system influenced by [several contingencies as] emotional and social factors [, and that] that uses neurobiological mechanisms to [feed and] build personal narratives and creative adaptations of experience...

Our brain's natural tendency to adapt and integrate new information can mask the difficulties in memory retrieval, making it challenging for individuals of more or less different mnemonic agility and deployment capacities, to recognize the extent of such capacities, especially under stress. This adaptive quality underscores the resilience and flexibility of human cognition. In the face of significant challenges and in the healthiest of newborn, though forcefully learning and memorizing symbiotics, even if completely overwhelming, it usually seems to be a more widespread adaptation for the just new-born to begin by crying! – specially under more or less sudden or swift scenario shifts.

Continuous adjustments mean that memory fluctuations can often be subtle and undetectable, as

the brain's natural tendency to adapt and integrate new information masks retrieval difficulties (which must have proven quite more adaptive). My experience with brain herpes has shown me through gradual understanding of my memory over three years, that compounded stress – more or less socioeconomically impelled – leads to increased anxiety and frequent blank forgetfulness. Such quality underscores human cognition's resilience, but also highlights the well known need for stress management to better navigate the complexities of daily life effectively. Counterintuitively, stress pushing flee-reactions is are more prominent than non-mnemonic contextual – well thought – reframings because they adapted upon emergent urgencies as in: you feel you need to be alert henceforward, because you forgot something, and are eventually learning to successfully wonder if you have forgotten anything in a safe-insured well rehearsed – then again verifying memory is mainly circumstantially-factual apatative-construction – pavlovian time consuming self therapy.

As we have discussed, memory is not a repository for facts and events at all, but a crucially adaptive concurrent deployment (and simultaneous learning) engaging onto some needed functional understanding based on similar structures in our experience, and swiftly-overwhelmable by anxious urges. It's also key when creating personal meanings and understanding one's existence every time in the long run as it intertwines with personal identity, social connections, and the interpretation of our reality. By definition, recalled truth, therefore, is not an absolute concept, but defined by the meaning, function, and context that memory provides: even if in deepest usuality we might be designed to somewhat abstract it automatically up to some pseudo-objective neat-retrieval of some pre-construed previous condition. Memory is much more a way of thinking, more a team meeting than a library. In my experience, it becomes obvious, as recalling you need some basic element better emerges from spontaneous recurrent environmental assemblies – like when you suddenly really need something to drink before you realize you haven't drank anything all day; when need to take one second to go to the toilet real fast; when you forget the keys, or any helpful way of doing things that helps you evocative not-that-neo cortical dynamics — all before anxiety takes control beyond any mnemonic hippocampal circumstance reaccommodation of the meeting.

By focusing on the significance of memory in creating personal relevance, one can appreciate its fluid nature and its role in shaping one's perception of truth and reality. Embracing diverse perspectives enhances our understanding of memory and technology by revealing innovative solutions and new forms of mnemonic engagement: redefining how and what is more important to reframe/resonate and/or interpret/understand from the past (Principled Innovation, 2021)

and how it's functional to do so in any given scenario. If understood as such deployment, the boundaries between natural and artificial memory deeply blur and exponentially empower. The interplay between intentionality and the lifeworld reveals the transformative impact of memory adaptation, as experienced through my own journey with brain herpes: how you homeomorphically deploy understandings on to any current circumstance depends on what you've recently been doing and what you feel and perceive in that same moment. In some way, the adaptive essence of memory and experience recalls artistic improvisation, where a blend of personal feelings, empathetic engagements, and rhythmic precisions creates an expressive experiences in a social common ground, thriving on dynamic interactions and subjective interpretations (Aparicio de Soto, 2023). Therefore, highlighting the importance of diverse perspectives in shaping our understandings, tools and technologies advance leading to eventually merges partly shared memories in a somewhat more clipped and functional reality approach. Regarding memory, fusing realities whereupon meanings evolve and combine to uphold are emerging at an accelerated rate.

III. CONTINUALLY REFRAMING OF SOCIALLY INTERACTIVE CONSTRUCTS UPON UNDERSTANDING, STORING, RECOVERING AND USE

The limits of self, communities, and realities suddenly show up. It's critical to deepen on how our resilience and adaptability begs for a future where memory, technology, and social constructs entwine into a brighter, more comprehensive and compassionate world. While pushing present social interactive dynamics right into our shared environments, the distilled essence of such exploration embraces a transformative power upon collective and creative understandings (Rottenbach, 2004).

Memory is a product of interactions and constructs: we must assume memory can clip and change dramatically as our context and constructs evolve. Hence possibilities emerge from its interaction with techno contexts. Memory semi-clipped data leads to the emergence of new forms of mnemonics, memorizing and memetic contextual recalling, such as collective or shared ideals, and approaches or tech-enabled recalling extensions that allow individual identities and collective experiences when blurring such lines: between individual and collective (Finley, Naaz & Goh, 2018). Shared and common memories are social constructs, as language: they adaptively shape memories in a dynamic and collective way. If constructs and interactions define our concurrent memoir, we are pushed to deepen our self-understanding and sharing within technology as both are becoming more and more



obviously inseparable while forced to show new ways to adapt and compensate for memory re-articulations and high demands, something obvious when using technology for data recovery in any case.

Plus, thinking extends beyond the brain, to our bodies, circumstances and interactions, highlighting embodied, situated, and socially offloaded supportive environments; memory-learning multiple-sense engagements, and collaborative intelligence: all are boosted by new technologies enhancing cognitive capabilities (Paul, 2021). The main reason is that, as we interact during our lives with anything, specific neuro-generative rethreading in our hippocampus still continues on to adulthood, similarly priming the role of evolving tech toolkits. We ongoing neural development underscoring memory formation and cognitive flexibility potential for the sake of our lifelong adaptive behavior almost always, and more deeply when we sleep.

IV. TECH-ENABLED MEMORY EXTENSIONS, MERGING & RESHAPABLE CONTENT UPON DICHOTOMIC BINARIES & PARTIALLY SHARED REALITIES

As technology advances, we may see the blurring of lines between individual memories and collective, shared memories, which can be affected by intensity and availability. This leads to a merging of shared memory functionally clipped realities, where our individual recalls of shared events become intertwined with those of others. A shared database of experiences and reminders of communal mnemonic updated functional flow that transcends individuality through technology, merging our ability to recall shared, seamless, symbiotically and in context. Fusing memories and ad-hoc realities today transform how we experience and interact, and for us humans – being able to create spontaneous solutions and find new ways to connect – it's a testament to the merging and continuous reordering between memory, technology and context, leading to functional innovation (Boden, 2004).

What are the implications of memory redefinitions and the emergence of new forms of shared memories? Its transformative power: innovative and resilient, necessarily moves towards more interconnectedness, beyond traditional dichotomies (as natural vs. artificial, individual vs. collective) break downs. For example, if "psychologists possess unique skills and abilities that are difficult to replace using AI (...) and the human element" (APA, 2023, p. 49) we must acknowledge it goes beyond mere recommended techniques or so: "knowledge gradually builds up with [spontaneous] socialization and every interaction (...) [as] operating according to certain habits can be rewarding, can prevent loss or pain" (Aparicio de Soto,

2022, p. 381) and hence it must've been evolutive to currently live-relearning it.

This reunderstanding of memory, and the emergence of shared sub-memories highlights the transformative power of interconnectedness breaking down traditional dichotomy. My experience with brain herpes showed me the impact of compounded stress, underscoring the need for adaptive strategies and stress management tools to cope with frequent forgetfulness and anxiety. As humans evolve, we must harness the power of such intersection to navigate new realities efficiently and support those adapting through health or tech shifts.

We will enter a realm where partially shared memories, thoughts, and experiences create new contingencies that blend towards a more interconnected world, where traditional dichotomies are breaking down (Michaelian & Sutton, 2013). A realm where common memories, thoughts, and experiences are partially shared, creating a new reality that blends individual and common aspects efficiently, something obvious for people that have ventured in memory integration due to health and/or technologic ease, and that now adapt through it in such shifts. As humanity evolves, we must harness the power of intersection: transformative, innovative, and liberating.

Actually, we must embrace the dissolution of dichotomies that direct and emerge from trying to imbue memory with real factual contingency of any sort that expels negotiability and/or well-being all for the sake of humanity, people around me, and myself. As put by Helena Matute "how do we know AI is not influencing what a human believes and what a human can do" (APA, 2024, p. 37). And if we don't: we need to hold on to only to fluid, holistic, and inclusive understandings – somehow transcending timings – able to intersect collective memories, technologies, and contexts into spontaneous alternatives – emerging possibilities from those same iterative interactions we have just discussed.- Eventually mainly such alternatives will lead to innovative solutions, adaptive and contingent. That is, new forms of creativity and novel ways of understanding ourselves, and our "places in the worlds". How can embracing the intersections of memory, technology, and social constructs unlock new possibilities for human connection, creativity, and resilience?

V. SPONTANEOUS ALTERNATIVES & EMERGENT POSSIBILITIES CELEBRATE DIVERSE PERSPECTIVES THAT COMPASSIONATELY ENRICH OUR INSIGHT

The intersection of memory, technology, and contexts allows such spontaneous alternation upon emergent possibilities: it makes us wonder more and more! What is the real role and effects upon upkeeping

traditional sociolinguistic dichotomies as we keep breaking down in and on to an even more interconnected world? If hippocampal mnemonics are deeply involved in relational cognition, enabling us to understand and remember social interactions:

(...) we must beware, in this creative frenzy, of creating illusions (...) that our love is indestructible, our spirits immortal, our hopes and realities. To do this is to be like an engineer who persuades himself that his badly designed engine is good, instead of trying to make it better. To create is to create realities – something which may give us great insight into our place in the world, and the place of that world upon abstract possibilities, and which at the same time transcends that world (Craik, 2010, p. 178).

As digital platforms expand us on to social shared memories, our hippocampus navigates complex environments, integrating personal and collective circumstances all the time: the ability to find creative solutions and adapt to new situations becomes a prime principal example of such phenomena. Hence, only by embracing such possibilities, we can unlock innovative solutions and new forms of adapting – and moving forward when required.- "Digital age has clear influences on how social interactions are facilitated, and consequently, must have implications for online social remembering (...) [yet] Research comparing (...) the expression of memory in the digital world is still in its infancy, motivating many questions" (Barnier & Hoskins, 2021). We might as well expect to find ourselves surfing out of deep pretensions for objective registry implications, on to selective functional recalling, both based on technology.

Individuals with brain function specificities, specially those within mnemonic adaptive reigns, may experience such reality-memory-merges and clippings much disposably faster than everyone else. Their interactions with systems can accelerate their process, as they rely more heavily on tech support for memory and cognition. Minority marginalized voices – functionally upon that same just mentioned sense of specificity – play a crucial role in shaping our understandings of memory and technology: they offer unique perspectives on to adaptive memory [and its paired or] impaired reframing (Roulstone et. al, 2017). We need to consider diverse perspectives and experiences in our exploration of memory, technology, and social constructs: all to unlock spontaneous solutions, creative, adaptive, and empowering. How can we include and consider diverse perspectives, particularly those of individuals with brain function episodic specific-enablers, that use tech memory recovery daily? As we know hierarchical structures spontaneously tend to challenge non-hierarchical spontaneous organizations, there is an incoming need to prioritize decentralization, specificity, registry-support and plurification for memory's exponentially growing

functional validities upon emerging systems and instances.

VI. SPONTANEOUS EMERGENCE OF POSSIBLE ALTERNATES INTERSECTING MEMORY, TECHNOLOGY, AND CONTEXT UPON MINORITIES, MARGINS & OTHER ACCELERATED INDUCTIONS

We've discussed how the hippocampus not only shapes our cognitive functions but also interacts continually with socio-technical relevant current constructs leading to new forms of memory and enabling collective experiences. We've seen this means not only to defy any authoritarian a priori controllers over narrative memories – especially if it overwhelms promoting diverse perspectives and inclusive collective memories – but also to foster decentralized, community-driven memory-keeping initiatives, allowing for more dynamic, organic and adaptive memory processing. One thing is for sure, as memory becomes more and more linked and empowered by technology, spontaneous alternatives will shape the future of memory recovery and cognitive support: technologies for memory loss and handling will enable innovative solutions and new forms of creativity (Czaja, Boot, Charness, Rogers & Sharit, 2018).

For the sake of adaptability, we must then push creativity and shared definitions: it's important to consider diverse perspectives when understanding memory. Individuals with brain function particularities normally deepen intersections between technology and mind as we face a continuous experience upon memory understandings (Charness & Boot, 2009) and technology enablement. Certain societal dynamics obviously enable only certain ways of mnemonic interactive relevant deployments, which becomes obvious both when aging articulates some systems over others due to recommended or well-known traditions; but also for people with memory recalling random incidences such as accidents or viral acute injuries, when it becomes clear that beyond losing information, you face but random struggles to rebuild it every time.

We are forced to engage on creating spontaneous solutions that can be seen as arising from the interactions between memory feel (which redefines itself every time as per reassembled or being activated), technology (and its anecdotic similarities ...and its evocative connectors), and context. Memory clipping reminds us that in any scenario, we only remember as far as to do something about both what we recall, and how we will recall it. And doing so changes evermore: individual memories become intertwined with use, tech and constructs. Actually, we mustn't overlook the role of "negative thinking [as] being a large factor in producing (...) fear itself, anxiety, frustration, hostility and guilt, with



[the] nervous tension accompanying them" (Lecron, 1988, p. 99).

We neuroscientifically know that "reliance on technology may lead to a loss of old memories' synapses due to disuse. When the brain forms new memories, new synapses are created. However, some old synapses are lost to strengthen the connections in new synapses so that new memories form" (Arnols, 2022). But to what extent memory would even be functional if it didn't? Would that memory exist at all, or shall we call it registry? Memory-recovery loss incidents, and any further auto-immune adaptations people who engage into serve as thought-provoking examples of the concepts discussed around technology rehab. Embracing the intersections of memory, technology, and constructs allows deeper understandings for emerging realities and their implications for experience. Experiencing a more and more partially shared reality, humanity approaches with incredible psychological impacts. It pushes identity shifting, it alternates perceptions, it gives birth to new forms of empathy and memory. People with memory impairment must face stress and re notice this every time for the good of resilience, adaptability and human spirit.

VII. CONCLUSIONS: HOW TO DISCUSS WHERE MEMORY, TECH, AND IDENTITIES INTERSECT?

Constructs influence memory evolution and adaptability by shaping our understanding and clipping, leading to new forms of memory and mnemonic engagement (Assman & Shortt, 2012). The exploration of memory with technology reveals an incoming profound transformation in the fabric of human experience. Thus, ensuring inclusive and compassionate approaches to memory improvement/recovery technologies, respecting individual autonomy and addressing potential biases becomes key in our times. We need to emphasize the importance of practices that allow, develop and implement data processing, memory-enabling and sharing technologies, ensuring they benefit individuals and communities fairly. Personal narratives and philosophical inquiries both push today the emergence of new forms of shared memories, collective experiences, and ad hoc innovative articulations allowing us to reconsider our understanding of our own self, communities, and realities. Building such mnemotechnical intersections holds the key to unlocking a new and hopefully universal dimension; where possibilities for human connection, technology, creativity and resilience thrive (Klingberg, 2010). Emerging reality harnesses the power of collective memories to foster inclusive communities and celebrate diversity as we have a boundless potential emerging from our human spirit that illuminates a future where memory, technology and constructs converge on

to a brighter world based on a more peaceful and compassionate understandings.

These intersections reshape our concept of memory. Memory isn't static but an adaptive system that dynamically keeps reblending personal and collective realities. Embracing diverse perspectives and redefining traditional dichotomies – like individual vs. collective memory — fosters interconnectedness, creativity, and resilience. Ethical considerations must prioritize individual autonomy and agency in memory recall and retention, while promoting shared, communal memory. Memory recovery technologies should serve our collective good, ensuring social cohesion and avoiding reinforcement of existing power structures. My personal journey with brain herpes exemplifies our deeply eidetic and intentional structures of memory: sketching how subjective experiences and adaptive processes intertwine to shape our understanding of episodic dynamics upon time.

Understanding the hippocampus's role in emotional responses, attention, and decision-making also allowed to highlight the significance in navigating digital age's memory augmentation. As technology advances, individual and collective memories increasingly merge, creating new forms of mnemonic engagement, and a likely new war to approach remembering for human beings. This convergence compels reexamining human experience, revealing innovative solutions while fostering inclusive common efforts. In a self-explorative spirit, I hope I've been able to ease a better sketch of such interplay, between intentionality and our lifeworld, trying to point out the transformative impact of memory adaptation as experienced through my own journey with brain herpes as I wander: How will we harness collective memories to build a compassionate and interconnected world? What ethical considerations must guide the development of memory technologies to ensure they promote social cohesion and serve the greater good?

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Challenges, Opportunities, and Prospects of Applying Innovative Technologies and Artificial Intelligence in the Reconstruction and Development of Ukraine

By Sergiy Kovalevskyy

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Keywords: innovative technologies, artificial intelligence, restoration of Ukraine, industry, digitalization, energy efficiency, public participation, international cooperation, economic stability, socio-economic systems.

GJHSS-H Classification: LCC: HC340.19, HC79.T4, TJ163.3, T58.5



CHALLENGES OPPORTUNITIES AND PROSPECTS OF APPLYING INNOVATIVE TECHNOLOGIES AND ARTIFICIAL INTELLIGENCE IN THE RECONSTRUCTION AND DEVELOPMENT OF UKRAINE

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Keywords: *innovative technologies, artificial intelligence, restoration of Ukraine, industry, digitalization, energy efficiency, public participation, international cooperation, economic stability, socio-economic systems.*

INTRODUCTION

Modern global challenges facing Ukraine require the implementation of advanced technologies and innovative approaches to ensure stable development and recovery of the country after the war. Innovative technologies, particularly artificial intelligence (AI), digitalization, machine learning, the Internet of Things (IoT), and blockchain, play a critical role in overcoming these challenges and open new horizons

for the modernization of the economy and social structures [1]. The war in Ukraine has caused significant economic and social devastation, necessitating immediate and effective measures for recovery [2, 3]. In these conditions, adapting the economy to new realities, ensuring resilience, high productivity, and environmental safety are priority tasks [4]. Innovative technologies become key elements of this process, contributing to the optimization of production processes, cost reduction, minimization of human errors, and enhancement of the environmental sustainability of production. AI, as one of the advanced technologies, opens up new opportunities for the analysis and forecasting of complex systems, identifying patterns in large data sets, which allows for minimizing chaotic phenomena and risks in various domains from the socio-economic sector to defense systems. Using AI for developing management strategies, adapting to changes, and preventing unforeseen consequences becomes a necessity in today's world [1]. Innovations and digitalization also promote infrastructure development, particularly the creation of "smart cities" that implement innovative solutions in urban planning and management [5]. This not only improves the quality of life for citizens but also attracts investments, contributing to economic development. The successful modernization of the industrial sector, the implementation of the latest materials and technologies, and ensuring energy independence through the use of renewable energy sources are decisive steps towards sustainable development in Ukraine [3,4]. Equally important is the role of the public in the implementation of innovations and the development of national intelligence. Active public participation in the development and implementation of innovative projects, support for scientific research, and the creation of favorable conditions for the activities of scientists and entrepreneurs are key factors for achieving significant changes in recovery and development [6].

Thus, the relevance of studying the challenges, opportunities, and prospects of applying innovative technologies and artificial intelligence in the recovery and development of Ukraine is driven by the need for a rapid and effective response to modern challenges, ensuring sustainable economic growth, and improving the quality of life of the population. The integration of advanced technologies into all aspects of the socio-

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economic life of the country creates the foundation for building a strong and prosperous state ready to face the challenges of the future.

a) *The Main Problem*

The main issue addressed in the article is the necessity of integrating advanced technologies to overcome the challenges caused by military actions and to ensure sustainable development of the country. Amid significant economic and social devastation, there arises a need for the modernization of the industrial sector, optimization of management processes, and enhancement of productivity and environmental safety. Artificial intelligence and innovative technologies serve as key elements in solving these problems, contributing to efficient resource management, adaptation to changes, and prevention of unforeseen consequences [7].

Key Aspects of the Problem Include:

- implementation of innovative technologies for the restoration of industrial production, cost reduction, and productivity enhancement;
- ensuring ecological sustainability of production through the use of energy-efficient technologies and materials that are easily recyclable;
- using AI for the analysis and forecasting of complex systems, which allows minimizing chaotic phenomena and risks in the socio-economic sector;
- development of autonomous defense systems, strengthening cybersecurity and counterintelligence through the application of AI;
- active public participation in the implementation of innovations, support for scientific research, and creation of favorable conditions for scientists and entrepreneurs.

Solving this complex problem requires synergy between state institutions, scientific communities, businesses, and the public to create a solid foundation for the innovative development of Ukraine.

The subject of the study in the article "Challenges, Opportunities, and Prospects for the Application of Innovative Technologies and Artificial Intelligence in the Recovery and Development of Ukraine" is the socio-economic systems of Ukraine in the context of post-war recovery and modernization. This includes all aspects of the functioning and development of the industrial sector, economic management, social infrastructure, as well as the national security and defense system.

The object of the study is the methods and technologies for the application of innovative technologies and artificial intelligence to ensure the effective recovery and sustainable development of Ukraine's socio-economic systems. This includes the analysis of identification, forecasting, and neutralization of global threats, the implementation of advanced

technologies in industry, the development of intelligent management systems, ensuring the ecological sustainability of production, and involving the public in innovation development processes.

The following tasks are outlined:

1. Identify the main economic and social problems caused by military actions; assess the state of the industrial sector and the necessity for its modernization; identify key factors affecting the resilience and security of socio-economic systems.
2. Analyze existing innovative technologies and their application in industry; consider the possibilities of using AI for optimizing production processes and resource management; evaluate the effectiveness of AI in predicting and minimizing chaotic phenomena in socio-economic systems.
3. Propose methods for integrating advanced technologies into production processes; study the impact of digitalization and automation on increasing productivity and reducing costs; develop strategies for transitioning to "smart" manufacturing.
4. Determine the use of energy-efficient technologies and materials; assess the impact of implementing "green" technologies on environmental safety; develop recommendations for reducing the environmental impact of industrial production.
5. Analyze mechanisms for involving the public in innovation development processes; evaluate the impact of public participation on the effectiveness of implementing innovative projects; develop measures to stimulate active public participation in the restoration and development of the country.
6. Identify existing programs and initiatives supporting innovation and scientific research; assess the effectiveness of government support in developing innovative potential; develop recommendations for improving the efficiency of government support for innovations.
7. Identify opportunities for international cooperation in the field of innovation and technology; assess the impact of integrating global innovative practices on the development of Ukraine; develop strategies for attracting international partners to the processes of recovery and development of the country.

Fulfilling these tasks will allow for a comprehensive study of the application of innovative technologies and artificial intelligence in the recovery and development of Ukraine, as well as the development of recommendations to improve the efficiency of these processes.

1. THE MAIN ECONOMIC AND SOCIAL PROBLEMS CAUSED BY MILITARY ACTIONS

Economic problems arising from military actions have a significant impact on various aspects of

Ukraine's economy [8]. One of the most important issues is the destruction of infrastructure. The military actions have caused substantial damage to transportation, energy, and utility infrastructure [9]. This significantly complicates logistics, supply of goods, and production. The restoration of infrastructure requires substantial financial expenditures, which further burdens the economy [10,11]. The reduction of production capacities is another serious problem. The destruction of industrial enterprises and their production capacities leads to the stoppage or significant reduction of many businesses' activities. This is caused by both physical damages and a lack of necessary resources for full-scale production activities. Financial losses have become an integral part of economic problems. Due to the decline in economic activity, the state is not receiving significant revenues. This, in turn, leads to an increase in public debt and budget deficit. Moreover, defense and security expenditures have significantly increased, further complicating the financial situation [12]. The outflow of investments also creates significant difficulties for the economy. The unstable situation and high risks lead to a decrease in both domestic and foreign investments. The loss of trust from investors and partners complicates the attraction of new investments needed for the recovery and development of the economy [13]. Unemployment has become one of the most tangible consequences of economic problems. The massive reduction of jobs due to the destruction of enterprises and the decline in economic activity leads to a significant increase in the number of unemployed. Additionally, the outflow of qualified personnel abroad in search of better working conditions and stability further exacerbates the situation in the labor market [14].

War has caused significant social problems that substantially affect the population of the country. One of the main issues is forced displacement and migration. A large number of people have been forced to leave their homes, becoming internally displaced persons or refugees. This creates significant social tension, as displaced persons often face difficulties integrating into new communities, where they are not always welcomed kindly [15]. Another major issue is psychological stress and trauma, which the population constantly experiences. Military actions, the loss of loved ones, and the destruction of homes leave deep psychological scars. People need serious psychological support and rehabilitation to overcome the consequences of traumatic events and return to a normal life [16, 17]. The decline in the quality of life has become another serious problem. Living conditions for many citizens have significantly deteriorated due to the destruction of residential buildings and infrastructure [18]. At the same time, inflation and shortages of goods lead to an increase in the cost of living, which further complicates the situation of the population. Educational and medical problems are no less important. Due to the destruction

of schools and universities, the educational process has been disrupted, negatively affecting the youth and their opportunities for gaining knowledge [19]. In some regions, due to the destruction of hospitals and medical facilities, necessary medical services are unavailable, endangering the health of the population.

As of today, the state of Ukraine's industrial sector is critical due to significant destruction and damage caused by the war and economic crisis. Many industrial enterprises have suffered severe destruction, which has led to a reduction in their production capacities and, consequently, production volumes [20]. This situation is further complicated by logistical problems: access to resources and materials has become extremely difficult due to damaged infrastructure, which, in turn, causes disruptions in the supply of finished products to consumers. Enterprises also lack financial resources for recovery and modernization, which complicates their operations. High costs for energy resources and logistics further exacerbate the situation, making the recovery process extremely expensive [21]. The need to modernize the industrial sector is becoming increasingly urgent. One of the main aspects of modernization is the integration of innovative technologies [14]. The introduction of advanced technologies can significantly increase production productivity and efficiency. Automation of production processes will reduce costs and improve product quality, which is a key factor in modern industry [22]. Environmental sustainability is also an important component of modernization. The use of energy-efficient and environmentally friendly technologies will help reduce the negative impact on the environment [23]. The development and implementation of materials that are easy to recycle will contribute to the conservation of natural resources and the creation of a more sustainable industrial system. Workforce training is another important aspect of modernization. Improving the qualifications of workers to operate with the latest technologies is necessary to ensure the efficient operation of enterprises. Investments in education and scientific research will contribute to the development of the country's innovative potential and the creation of a highly qualified workforce [24, 25]. Finally, government support is a key factor in the process of modernizing the industrial sector. Providing tax incentives and financial support for the recovery and modernization of enterprises will help stimulate their development. Encouraging investment in scientific research and development will promote the introduction of the latest technologies and increase the competitiveness of Ukrainian industry in the global market [26, 27].

Key factors affecting the resilience and security of Ukraine's socio-economic systems are of utmost importance, especially in the context of post-war recovery and modernization. These factors encompass various aspects of economic, social, and infrastructural

development, innovative progress, civic activity, and international cooperation. Firstly, economic stability is a fundamental prerequisite for the resilience of socio-economic systems. It includes a balanced state budget, which is the foundation of the country's financial stability, as well as effective control over inflation, which helps maintain the population's purchasing power. Additionally, supporting small and medium-sized enterprises is critically important for ensuring economic growth, as these businesses create jobs and contribute to the diversification of the economy. Secondly, social integration and support are key to ensuring social resilience. This includes providing social protection for vulnerable groups such as the elderly, children, people with disabilities, and internally displaced persons. Rehabilitation and psychological support programs are also necessary for those affected by the war, to help them adapt to new living conditions and restore their psychological and physical health. Thirdly, infrastructural resilience is critically important for ensuring the uninterrupted functioning of the economy and society. This includes the restoration and modernization of transport and communal infrastructure, which ensures the efficient functioning of cities and villages. Ensuring energy security and independence is also a key factor, as it reduces dependence on external energy suppliers and increases the resilience of the energy system. Fourthly, innovation and technological development are driving forces of progress. Integrating innovative technologies into production and management processes enhances efficiency and productivity, reduces costs, and creates new opportunities for growth. Supporting scientific research and development promotes the creation of new technologies and innovations that can be implemented in various sectors of the economy. Fifthly, civic engagement and participation are important for democratic development and social resilience. Involving the public in decision-making processes and monitoring their implementation increases government transparency and accountability. Supporting public initiatives and volunteer movements fosters active participation of the population in solving social and economic problems, making society more cohesive and resilient. Sixthly, international cooperation is an important factor for the country's development in the context of globalization. Attracting international aid and investments contributes to economic growth and infrastructure modernization. Integration into global economic and technological processes allows Ukraine to benefit from the global economy, gain access to the latest technologies and innovations, and expand markets for Ukrainian goods and services.

Together, these factors create a solid foundation for ensuring the resilience and security of Ukraine's socio-economic systems in the context of post-war recovery and modernization. They are interconnected and interdependent, so a

comprehensive approach to their implementation is critically important for achieving sustainable development of the country.

II. INNOVATIVE TECHNOLOGIES AND THEIR APPLICATION IN INDUSTRY

Innovative technologies in industry play a key role in the modernization of production processes. They contribute to increased productivity, reduced costs, and minimized environmental impact. Several main technologies are actively used in modern manufacturing, significantly affecting the efficiency and quality of production processes. One of these technologies is the Internet of Things (IoT) [28]. This technology provides interconnectivity between different devices and systems for real-time data collection and exchange. IoT can enhance production process efficiency, monitor equipment status, predict maintenance needs, and reduce repair costs. Another important technology is additive manufacturing, known as 3D printing [29]. It allows for the production of parts and prototypes directly from digital models. The advantages of this technology include reduced material costs, shortened development time for new products, and the ability to quickly make design changes. Robotics and automation also play a significant role in modern industry. They allow for the automation of production processes and the use of robots to perform routine and hazardous tasks. This leads to increased productivity, reduced labor costs, and improved product quality. Artificial Intelligence (AI) and machine learning are another group of technologies actively used in the industry. They enable the analysis of large volumes of data, demand forecasting, optimization of production processes, and quality control of products. The benefits of these technologies include increased forecast accuracy, reduced production costs, and enhanced flexibility of production systems [1]. Blockchain is a technology that ensures transparency and security in supply chains and product data management. The use of blockchain enhances data security, reduces the risk of fraud, and improves product traceability [30]. Finally, virtual and augmented reality (VR/AR) find wide applications in the industry [31]. They are used for personnel training, modeling of production processes, and product design and engineering. These technologies improve training efficiency, reduce prototyping costs, and enhance design quality.

One of the key areas of artificial intelligence application is the optimization of production processes. For example, demand forecasting for products using AI involves analyzing historical data and identifying future trends. This allows businesses to plan production more accurately, avoid surpluses and shortages of products, and reduce storage costs. Thus, companies can use their resources more efficiently and respond to changing

market needs [1,7]. Additionally, automating production planning with AI algorithms significantly increases efficiency. Instead of manual planning, which can be labor-intensive and inaccurate, AI allows for automating this process by considering various factors such as resource availability, production capacities, and order deadlines. This ensures a more accurate allocation of resources and reduces the risks of delays and downtime. Product quality control is also greatly improved with AI. By using machine learning technologies and data analysis, businesses can detect defects at early stages of production. This helps reduce the percentage of defects and improve the overall quality of the products. As a result, companies lower costs associated with reprocessing and disposal of defective products, enhancing customer satisfaction. In terms of resource management, AI also offers significant advantages. For instance, analyzing energy consumption with AI helps develop strategies to reduce energy costs. AI algorithms can identify the most energy-intensive processes and suggest ways to optimize them, contributing to lower energy expenses and increased environmental sustainability of production. Predictive maintenance is another important area of AI application. By analyzing data on equipment conditions, AI can predict when maintenance or component replacements are needed. This helps avoid unexpected downtime and reduces repair costs, ensuring continuity of production processes. Finally, inventory management using AI optimizes this process. By analyzing data on demand, production, and supply, AI helps determine optimal inventory levels, preventing material shortages and reducing storage costs. This contributes to more efficient resource utilization and improves the overall economic efficiency of the enterprise.

The capabilities of AI can be considered through three main aspects: forecasting economic trends, minimizing chaotic phenomena, and real-time process control and monitoring [1,7]. Artificial intelligence is capable of conducting deep analysis of large volumes of economic data. This allows for the identification of hidden patterns that remain invisible through traditional methods. As a result, AI can more accurately forecast economic trends. For example, using machine learning algorithms to model various economic scenarios provides an opportunity to assess their impact on socio-economic systems. This enables high-precision forecasting of future events, which is extremely important for making informed decisions in economic policy. Another important function of AI is minimizing chaotic phenomena in socio-economic systems [32]. Using AI to recognize anomalous phenomena in data allows for timely responses to potential risks. For instance, if AI detects anomalies in financial indicators, it may signal potential issues, enabling preventive measures to be taken and

minimizing negative impacts. Furthermore, AI helps develop and implement effective management strategies, enhancing the resilience of socio-economic systems and their adaptability to changes. Artificial intelligence also has significant capabilities in the field of real-time control and monitoring of socio-economic processes. This allows for rapid responses to changes and informed decision-making. For example, using AI to monitor economic indicators in real-time enables the timely identification of negative trends and appropriate reactions. Additionally, AI algorithms can forecast potential socio-economic crises and develop preventive measures to avoid them, contributing to stability and security [1,7].

III. METHODS OF INTEGRATING ADVANCED TECHNOLOGIES INTO PRODUCTION PROCESSES

Integration of advanced technologies into production processes is an important step to enhance the efficiency and competitiveness of enterprises. This process includes several stages and methods that help implement the latest developments into the daily activities of companies. The first stage is the assessment of the current state of production. This stage involves auditing existing production processes to identify weaknesses and opportunities for improvement. During this analysis, the technological level of existing equipment and software is also evaluated. This helps to understand which aspects need modernization and which technologies can be most effectively implemented. After assessing the current state, it is necessary to develop a technological integration roadmap. At this stage, key technologies that can be integrated into the production process are identified. After determining the key technologies, a phased implementation plan is developed, which includes testing new technologies and scaling them in the production process. Automation of production processes is another important stage. This includes the implementation of robotic systems to perform routine and hazardous tasks, reducing risks for workers and increasing productivity. Additionally, manufacturing execution systems (MES) are used to coordinate all production processes, ensuring their consistency and efficiency [33]. The next step is the implementation of artificial intelligence (AI) systems. Machine learning algorithms are used for demand forecasting, production planning, and inventory management. AI is also applied for product quality control and defect detection, allowing for reduced waste and improved quality of finished products.

One of the key aspects of digitalization is the optimization of production processes. The use of data from the Internet of Things (IoT) and artificial intelligence (AI) allows for the real-time analysis and optimization of



production processes. This helps to reduce equipment downtime and increase production efficiency. Continuous monitoring and data analysis enable enterprises to respond promptly to changes and adjust processes to achieve maximum productivity. Moreover, automating routine tasks significantly enhances the speed and accuracy of work. The implementation of robots and automated systems reduces the need for manual labor, which not only speeds up task execution but also decreases the likelihood of errors. Robots can perform tasks with high precision and reliability, increasing the overall efficiency of production processes. Digitalization and automation also contribute to significant reductions in production costs. The optimization of production processes using AI also helps to reduce waste and improve material usage efficiency. Effective resource management is another important aspect of cost reduction [34]. Using AI for demand forecasting and inventory management helps to avoid excessive stock and reduce storage costs. Accurate demand forecasting enables businesses to plan purchases and production more efficiently, reducing the risk of overstock and the costs associated with storing and disposing of unused materials. The use of sensors and AI for monitoring product quality at all stages of production allows for the timely detection and correction of defects [35]. This helps to improve the quality of the final product and reduce the amount of defective goods. Data analytics and forecasting also play a crucial role in ensuring high product quality. The use of large data sets to analyze trends and predict potential issues allows enterprises to prevent their occurrence. This reduces the risk of production failures and improves the overall reliability of production processes.

The first step towards "smart" manufacturing is the development of a strategic plan. This plan should include defining long-term goals and stages of transitioning to innovative manufacturing. It is important to create a detailed action plan with specific deadlines and to assign responsible individuals for the implementation of each stage. Only a clearly defined plan can ensure a gradual and consistent transition to new technologies [1]. The second important aspect of the strategy is investing in technology and infrastructure. For the successful upgrading of equipment and implementation of the latest technologies, it is necessary to attract investments. Moreover, it is important to develop infrastructure that will support "smart" manufacturing, including high-speed internet, servers, and cloud computing. This will create the necessary foundation for the effective operation of modern manufacturing. The third step is the education and training of personnel. Existing staff needs to be prepared to work with new technologies, which can be achieved through training and workshops. At the same time, it is necessary to attract young specialists with

skills in artificial intelligence, robotics, and data analytics. Personnel training is a critically important factor for the successful implementation of innovations. The next stage is the implementation of advanced technologies. The use of artificial intelligence and machine learning will allow optimizing production processes, forecasting demand, and efficiently managing resources. Innovative technologies become the foundation for creating "smart" manufacturing. The fifth step is to stimulate innovation and collaborate with scientific institutions. It is important to establish cooperation with universities and research institutes for the development and implementation of the latest technologies. Supporting startups and innovative projects in the manufacturing sector will contribute to the development of new ideas and solutions, strengthening the competitiveness of the industry. Ensuring environmental sustainability is the sixth important element of the strategy. This includes the implementation of energy-efficient technologies and processes to reduce environmental impact. The use of recyclable materials and the reduction of production waste will help conserve natural resources and reduce the environmental footprint of manufacturing activities [36]. Finally, the seventh step is monitoring and evaluating effectiveness. Regular monitoring of the results of technology implementation and assessing their effectiveness will allow timely identification of problems and adjustment of strategies and processes based on collected data and analysis of results. This will ensure continuous improvement and increase the efficiency of "smart" manufacturing.

All these stages together form a comprehensive strategy for transitioning to "smart" manufacturing, which will contribute to increased productivity, cost reduction, and sustainable development of the industrial sector.

IV. USE OF ENERGY-EFFICIENT TECHNOLOGIES AND MATERIALS

One of the main areas of energy efficiency is the use of Energy Management Systems (EMS) [37]. These systems allow monitoring and optimizing energy consumption in enterprises, providing accurate real-time measurement of energy usage through intelligent meters. This not only helps reduce energy costs but also promotes more rational use of resources. Renewable energy sources play an important role in reducing dependence on fossil fuels. The integration of solar panels, wind turbines, and other renewable energy sources allows businesses to significantly reduce greenhouse gas emissions. The use of hybrid systems that combine multiple renewable energy sources ensures stability and reliability of energy supply. Thermal insulation and energy-efficient buildings are another important aspect of reducing energy consumption. Using modern materials for building insulation

significantly reduces heat loss, thereby decreasing energy consumption for heating. "Green" roofs and facades also contribute to improved thermal insulation and reduced energy consumption.

Composite materials are becoming increasingly popular in industrial production due to their high strength and lower weight. This allows for reduced energy consumption in production and transportation, which is an important aspect of energy efficiency. Materials with high thermal insulation also play a significant role in reducing heating and cooling costs for buildings. Using materials with low thermal conductivity for building structures ensures effective thermal insulation and helps reduce energy consumption. Recyclable materials are becoming increasingly relevant in modern production [38]. The use of materials that are easily recyclable reduces the need for new raw materials and lowers energy consumption in production. This helps conserve natural resources and reduces environmental impact.

The development and implementation of a sustainable development strategy is a key step towards reducing the environmental impact of production. A strategic plan should include measures to reduce energy consumption, with an emphasis on the use of renewable energy sources and energy-efficient technologies. Investments in energy-efficient technologies and equipment are necessary to enhance resource efficiency. Implementing modern energy-efficient technologies, such as LED lighting, energy management systems, and renewable energy sources, allows for reduced energy consumption and increased productivity. Optimizing production processes is another important area for reducing environmental impact. Using optimization methods to lower energy consumption and reduce waste at all stages of production contributes to increased production efficiency. Implementing quality management systems reduces the number of defects and enhances the efficiency of production processes. Raising environmental awareness among staff is a crucial aspect for ensuring the sustainable development of enterprises. Organizing training and educational programs to enhance the level of environmental awareness among employees promotes the implementation of ecological initiatives in the workplace. Using environmentally friendly and recyclable materials helps reduce environmental impact. By replacing harmful materials with eco-friendly alternatives, the environmental burden of production can be significantly reduced. Monitoring and reporting are essential elements for assessing the environmental impact of production processes. Implementing systems for monitoring environmental indicators allows for the evaluation of the effectiveness of implemented measures and the improvement of ecological practices based on the obtained data. Regular reporting on

achieved results enhances the transparency and effectiveness of environmental measures.

Implementing these recommendations will reduce the environmental impact of industrial production, increase resource efficiency, and ensure the sustainable development of enterprises.

V. INVOLVEMENT OF THE PUBLIC IN THE PROCESSES OF INNOVATIVE DEVELOPMENT

Innovative development of the country requires active public participation, which can contribute to the generation of new ideas, improve the quality of decisions, and increase the efficiency of project implementation [39]. One of the key methods of engaging the public is the use of various platforms for public initiatives and participation. For instance, online platforms can be an effective means for discussing innovative projects, gathering ideas, and receiving proposals from the public. Organizing public hearings and consultations also plays an important role, allowing the public to participate in discussions about innovative development plans and projects at public events. Educational and informational campaigns are another important element of public engagement. Conducting educational programs, seminars, and training sessions helps raise public awareness about innovations and their impact on society. The use of mass media to disseminate information about innovative projects and opportunities for public participation also promotes active public engagement in the processes of innovative development. Public competitions and grants can stimulate active public participation. Organizing competitions for the best innovative ideas involving students, scientists, entrepreneurs, and community activists helps identify promising projects and ideas. Grant programs provide financial support for the implementation of public initiatives and projects in the field of innovative development, facilitating their implementation and expansion. Cooperation with public organizations and volunteer movements is another effective mechanism for public engagement [40]. Partnerships with non-governmental organizations that address innovation and development issues help expand the circle of participants and increase the effectiveness of project implementation. Engaging volunteers in the implementation of innovative projects also promotes active public involvement and provides additional resources for projects.

Public engagement allows for the consideration of various perspectives and needs, contributing to the identification of potential problems and finding optimal solutions at early stages of projects. Broad discussion of projects helps to identify risks and develop effective strategies to address them. Reducing resistance to change is also an important outcome of public engagement. Active participation of the population in the

decision-making process increases trust in projects and decreases resistance to change. Open communication and process transparency promote a positive attitude towards innovative initiatives and their support. Active public participation encourages the generation of new ideas and stimulates a creative approach to problem-solving. Engaging youth, scientists, and entrepreneurs enables the implementation of advanced technologies and methodologies, which increases the competitiveness and efficiency of projects. Joint efforts of the public and the state contribute to faster and higher-quality task execution, enhancing the effectiveness of project implementation and ensuring their success.

To stimulate active public participation in the recovery and development of the country, it is necessary to create a favorable legal environment. This includes amending legislation to ensure legal protection for public initiatives and simplifying the procedure for public participation in decision-making. Providing access to public information about innovative projects and their funding is also an important element. Financial support for public initiatives can be implemented through the creation of special funds to support innovative development. Providing grants and subsidies for the implementation of projects proposed by the public promotes their adoption and growth. Educational programs and training are also important measures. Conducting training programs to enhance the qualifications of public activists and volunteers in the areas of project management, finance, and legal aspects improves the effectiveness of their activities. Organizing training on innovative entrepreneurship and the development of public initiatives allows participants to increase their knowledge and skills [41]. Information campaigns and communication are another important measure. Developing and implementing information campaigns aimed at raising public awareness about opportunities to participate in the recovery and development of the country encourages more participants to get involved. Using social networks and other digital platforms to disseminate information effectively reaches a broad audience. E-democracy tools can also encourage active public participation [42]. Implementing electronic platforms for discussing and voting on public initiatives allows more people to be involved in the decision-making process. The development of e-government systems ensures transparency and accountability in decision-making processes. Encouraging partnerships between the state and civil society is also an important measure. Creating joint working groups and committees to discuss and implement innovative projects promotes effective interaction between different sectors. Supporting partnership projects between government agencies, businesses, and public organizations enables the

implementation of comprehensive and effective projects.

VI. PROGRAMS AND INITIATIVES TO SUPPORT INNOVATION AND SCIENTIFIC RESEARCH

Ukraine is actively working on developing the country's innovative potential through the implementation of various programs and initiatives. Among them, several key national programs aimed at supporting scientific research and innovation stand out. An important element of support is the State Fund for Fundamental Research (SFFR). This fund supports scientific research aimed at the development of science and technology in Ukraine. Thanks to the SFFR, research teams can receive grants to conduct fundamental research and develop new technologies. Another significant program is the Innovation Activity Development Program for 2021-2030. It provides financial support for innovative projects, the development of innovation infrastructure, and the creation of conditions for the implementation of advanced technologies. This program is an important step towards creating favorable conditions for the innovative development of the country. At the regional level, there are also important initiatives aimed at supporting innovative activities. For example, the Kyiv Polytechnic Technopark is a center of innovative activity that provides support to startups and businesses, commercializes scientific developments, and offers infrastructure and consulting support for the implementation of innovative projects. Another example is the Kharkiv IT Cluster, an association of IT companies that supports innovative projects in the field of information technology, promotes the development of startups, and trains personnel. The Kharkiv IT Cluster actively works on creating an ecosystem that supports the development of the IT industry in the region. In addition to national and regional initiatives, international programs and grants play an important role. For instance, the USAID Competitive Economy Program aims to support small and medium-sized businesses, stimulate innovation, and foster entrepreneurship [43]. Grants from the European Union also provide funding for scientific research and innovative projects in Ukraine. State support plays a key role in the development of Ukraine's innovative potential. One of the positive aspects is the increase in funding for innovative projects and scientific research, which contributes to the development of the country's innovative potential. However, the insufficient amount financial resources and their uneven distribution complicate the implementation of many projects. The development of infrastructure and institutional support also have a significant impact. The creation of techno parks, innovation clusters, and startup support centers creates favorable conditions for innovative activities. However, the insufficient number of

such centers in the regions and the limited cooperation between scientific institutions and businesses are significant obstacles. The regulatory environment also plays an important role. Legislative initiatives aimed at simplifying procedures for creating and conducting innovative businesses are a positive aspect. However, the complexity of regulatory procedures, bureaucracy, and corruption hinder the effective implementation of innovative projects.

To enhance the efficiency of state support for innovations, it is necessary to increase government investments in innovative projects and scientific research. It is important to implement transparent and effective mechanisms for the allocation of financial resources to ensure equal access to support. Expanding the network of techno parks, innovation clusters, and startup support centers in various regions of the country will promote the development of innovative infrastructure. It is also necessary to promote the development of incubators and accelerators to support young entrepreneurs and startups. Improving the legislative framework to simplify the procedures for creating and conducting innovative businesses, as well as implementing anti-corruption measures to ensure transparency and efficiency in the area of innovation support, is critically important. Increasing funding for educational programs in the fields of technology and innovation, developing internship and exchange programs between scientific institutions, businesses, and international partners will contribute to the training of qualified personnel. It is necessary to introduce mechanisms to support partnerships between scientific institutions and enterprises, promote the commercialization of scientific developments, and the implementation of innovations in production. Conducting information campaigns to raise awareness of the opportunities for supporting innovative projects and creating platforms for the exchange of information and experience among various participants in the innovation process are also important steps.

VII. POSSIBILITIES OF INTERNATIONAL COOPERATION IN THE FIELD OF INNOVATIONS AND TECHNOLOGIES

One of the key directions for Ukraine's development is active engagement in international cooperation in the field of innovation and technology. This cooperation opens up extensive opportunities for Ukrainian scientists, entrepreneurs, and innovators to participate in global programs, receive support for their projects, and implement advanced technologies. In the context of globalization and rapid technological development, integration into international programs becomes a necessity for ensuring the country's competitiveness and sustainable development. Through international cooperation, Ukrainian specialists gain

access to advanced research platforms, innovative laboratories, and expert knowledge, which helps to enhance the level of scientific research and technological developments in Ukraine. One of the important programs of international cooperation is Horizon Europe. This is a European program aimed at supporting research and innovation. Ukrainian scientists and innovators can join this program, receiving funding for their scientific and technological projects. Horizon Europe provides access to advanced research platforms, laboratories, and expert knowledge, which helps to raise the level of scientific research in Ukraine. By participating in this program, Ukrainian researchers have the opportunity to collaborate with leading European scientific institutions, exchange experiences and knowledge, significantly improving the quality and efficiency of their research activities [44]. Another important program is EUREKA, an international network that brings together businesses, universities, and research institutes from different countries to support research and development. Through EUREKA, Ukrainian scientists and entrepreneurs can collaborate with international partners, exchange experiences and knowledge, and receive funding for joint projects. This program promotes the development of innovative projects, attracting investments, and expanding markets for Ukrainian products and technologies. Cooperation within the framework of EUREKA allows Ukrainian companies and research institutions to integrate into global innovation networks, enhancing their competitiveness on the international stage [45]. The COSME program of the European Union aims to support small and medium-sized businesses, including innovative startups [46]. Ukrainian entrepreneurs can take advantage of this program's opportunities to develop their businesses, implement innovations, and expand markets. COSME provides financial support, consulting services, and access to European markets, allowing Ukrainian enterprises to grow and compete internationally. Through this program, Ukrainian startups have the opportunity to realize their innovative ideas, attract investments, and expand their activities beyond the country's borders. In addition to international cooperation programs, bilateral and multilateral agreements are of great importance [47]. For instance, agreements on scientific and technical cooperation between the governments of Ukraine and other countries promote the development of joint scientific projects and knowledge exchange. Initiatives within the framework of the United Nations also play an important role as they aim to support innovation and sustainable development. Thanks to these agreements, Ukraine can attract international experience and technologies, contributing to the development of the country's scientific and technical potential. Cooperation within such agreements allows for more efficient use of scientific resources, improving staff qualifications, and

creating new opportunities for scientific research. Grant programs from the European Union offer significant opportunities for Ukrainian scientists and innovators to receive financial support. Additionally, development funds from USAID, the World Bank, and other international organizations support projects aimed at developing innovation infrastructure and technologies in Ukraine. This allows for the implementation of ambitious projects and fosters the development of innovative activities. International grants and funds provide financial stability and support for the realization of scientific and technological initiatives, which is a crucial step toward the technological and economic growth of the country.

The integration of global innovative practices has a significant positive impact on the development of Ukraine in various fields. The implementation of advanced technologies and innovative approaches accelerates technological development, enhancing the competitiveness of Ukrainian enterprises in the global market. The introduction of cutting-edge technologies also stimulates infrastructure modernization, particularly in such critically important sectors as energy, transportation, and communications. This is a crucial step towards ensuring sustainable economic growth, which in turn increases the efficiency and productivity of production processes. The development of innovative activities contributes to the creation of new jobs and the attraction of investments, which are important factors for economic growth and the improvement of living standards. The integration of advanced technologies allows Ukraine to significantly accelerate its technological development. The use of innovative practices fosters the modernization of production capacities and improves product quality. The implementation of new technologies in areas such as energy, transportation, and communications provides the necessary conditions for sustainable economic growth. This not only enhances the competitiveness of Ukrainian enterprises in the global market but also contributes to the creation of modern infrastructure capable of supporting the country's economic development in the long term. Innovations become a key factor in successful development, promoting economic stability and improving the quality of life for citizens. International cooperation opens new opportunities for increasing investment in the Ukrainian economy. The attraction of foreign investments becomes possible through close collaboration with international partners, allowing the implementation of best global practices and technologies. This enhances the productivity and efficiency of production processes, which in turn improves the financial status of the country. The growth of economic activity, driven by the implementation of innovative practices, ensures stable economic development and the improvement of living standards. Investments in innovative projects promote

entrepreneurship development, the creation of new jobs, and the growth of incomes for the population, which are important factors for social stability and prosperity. The integration of advanced technologies and innovative practices positively impacts the social well-being of the population. The use of modern technologies contributes to the creation of new jobs, reducing unemployment and improving working conditions. Participation in international educational programs and exchanges increases the qualification of personnel, enhancing the level of education and professional training. As a result, the population gains more opportunities for self-realization and improving their well-being, which overall improves social stability and quality of life in the country. Socio-economic development strengthens democratic institutions, increases public activity and participation in decision-making processes, which is an important factor in the development of civil society. The implementation of "green" technologies and innovative practices significantly reduces the environmental burden. This promotes the development of sustainable production that minimizes harmful emissions and improves air quality. The use of environmentally friendly technologies helps preserve natural resources and ensure the ecological safety of the country. Through such measures, Ukraine can move towards sustainable development, contributing to the preservation of the environment for future generations and ensuring a healthy and safe environment for its population. Innovations in the field of ecology contribute to reducing dependence on fossil fuels, developing renewable energy sources, and increasing energy efficiency, which are important conditions for ensuring environmental sustainability and a healthy future.

To effectively engage international partners in the processes of Ukraine's recovery and development, it is necessary to develop and implement a set of strategies aimed at strengthening international cooperation and integrating global innovative practices. This will create favorable conditions for the development of innovative activities, attracting foreign investments, and enhancing the competitiveness of the Ukrainian economy. The first step in this direction should be the development of a national strategy for international cooperation. This strategy should define the key areas of cooperation and priority fields for attracting international partners. It is important that the strategy has clearly defined goals, objectives, and implementation mechanisms that ensure the effectiveness of cooperation and the achievement of set goals. Only under such conditions can a stable foundation for long-term partnership and successful development be created. The development of a national strategy is an important step in ensuring coordinated actions and achieving desired results in the field of international cooperation. The next crucial step is the development of innovative infrastructure. It is necessary to create and

actively develop technology parks, innovation clusters, and research centers that can become platforms for cooperation with international partners. Such structures will facilitate the exchange of experiences, knowledge, and technologies, creating a favorable environment for the development of innovative activities. Additionally, it is important to support startups and innovative projects through incubators and accelerators, which will help create a strong innovation ecosystem. The development of innovative infrastructure will contribute to enhancing the efficiency of scientific research and technological development, providing the necessary conditions for their implementation. State support and financing of joint projects with international partners are key elements of successful cooperation. It is necessary to ensure financial support through joint grants and funding programs, as well as to create mechanisms to simplify the procedures for financing and implementing international projects. This will contribute to their successful implementation and ensure long-term cooperation, which is extremely important for sustainable development. Financial support allows for the realization of ambitious projects, attracting highly qualified specialists, and utilizing advanced technologies to achieve high results. One of the priority areas is the training of personnel and the exchange of experiences. Developing personnel training programs in the field of innovation and technology, including internships, exchange programs, and cooperation with leading international universities, will contribute to the enhancement of the qualifications of Ukrainian specialists. Organizing international conferences, seminars, and training sessions will allow for the exchange of experiences and knowledge, promoting the development of innovative activities in Ukraine. The preparation of highly qualified personnel is an important factor in the successful development of innovative activities and the enhancement of the competitiveness of Ukrainian enterprises in the international market. Stimulating scientific and technical cooperation is also an essential element of a successful strategy. Supporting joint research projects between Ukrainian and international scientific institutions will contribute to the development of Ukraine's scientific and technical potential. Establishing bilateral and multilateral agreements on scientific and technical cooperation will ensure stable knowledge and technology exchange, which is key to sustainable development. Scientific and technical cooperation facilitates Ukraine's integration into the global scientific community, enhances the quality of scientific research, and develops innovative technologies. Informational support and promotion of cooperation opportunities are the final, but no less important, aspect. It is necessary to conduct informational campaigns to raise awareness about the possibilities of international cooperation in the fields of innovation and technology. Using digital platforms to

disseminate information about international programs, grants, and cooperation opportunities will attract more participants and develop innovative activities. Informational support allows effective communication with potential partners, expanding the circle of cooperation, and attracting new participants to innovative projects. The implementation of these strategies will enable Ukraine to effectively engage international partners in the processes of the country's recovery and development. This will facilitate the integration of global innovative practices, ensuring sustainable economic and societal development, strengthening Ukraine's position on the international stage, and improving the quality of life for the population. International cooperation in the field of innovation and technology will become an important factor in economic growth, technological development, and social well-being in Ukraine.

VIII. CONCLUSIONS

1. The "Opportunities and Prospects for the Application of Innovative Technologies and Artificial Intelligence in the Reconstruction and Development of Ukraine" demonstrates the necessity of integrating advanced technologies to overcome these challenges and ensure sustainable development of the country.
2. Analyzing the current state of Ukraine's industrial sector, the need for its modernization and the implementation of the latest technologies becomes evident. Innovative technologies, particularly artificial intelligence, digitalization, the Internet of Things, and blockchain, play a critical role in improving the efficiency of production processes, reducing costs, and increasing productivity. The use of AI allows for the optimization of management processes, analysis of large data sets, and forecasting of economic trends, which helps to minimize chaotic phenomena and risks.
3. An important aspect is ensuring the environmental sustainability of production. The use of energy-efficient technologies and materials, the implementation of "green" technologies, helps to reduce environmental impact and promote sustainable production. This not only conserves natural resources but also improves the environmental safety of the country.
4. Public participation and support for scientific research are key factors for the successful implementation of innovations. Active public involvement in the development and implementation of innovative projects, support for scientific research, and the creation of favorable conditions for scientists and entrepreneurs contribute to significant changes in the industrial recovery and development of Ukraine.



5. The necessity of international cooperation is also apparent. Integration into global programs provides access to advanced research platforms, laboratories, and expert knowledge, which enhances the level of scientific research and technological development in Ukraine. International cooperation opens new opportunities for increasing investments, implementing innovations, and expanding markets.
6. The implementation of the proposed strategies will enable Ukraine to effectively attract international partners to the processes of recovery and development, integrate global innovative practices, ensure sustainable economic and societal development, strengthen the country's positions on the international stage, and improve the quality of life for its population. International cooperation in the field of innovation and technology will become an important factor for economic growth, technological development, and social well-being in Ukraine.

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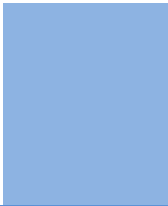
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Acknowledgments

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The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.



Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
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- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
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Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

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- j) There should be brief acknowledgments.
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The full postal address of any related author(s) must be specified.

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The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

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A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

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Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

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Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



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TIPS FOR WRITING A GOOD QUALITY SOCIAL SCIENCE RESEARCH PAPER

Techniques for writing a good quality human social science research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

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6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

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10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

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12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

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15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

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Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

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INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

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- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

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- Submitting a manuscript with pages out of sequence.
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- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
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Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

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Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.



The following approach can create a valuable beginning:

- o Explain the value (significance) of the study.
- o Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- o Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- o Briefly explain the study's tentative purpose and how it meets the declared objectives.

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Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

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Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- o Report the method and not the particulars of each process that engaged the same methodology.
- o Describe the method entirely.
- o To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- o Simplify—detail how procedures were completed, not how they were performed on a particular day.
- o If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- o Resources and methods are not a set of information.
- o Skip all descriptive information and surroundings—save it for the argument.
- o Leave out information that is immaterial to a third party.



Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- o Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- o In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- o Present a background, such as by describing the question that was addressed by creation of an exacting study.
- o Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- o Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- o Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- o Do not include raw data or intermediate calculations in a research manuscript.
- o Do not present similar data more than once.
- o A manuscript should complement any figures or tables, not duplicate information.
- o Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."



Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- o You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- o Give details of all of your remarks as much as possible, focusing on mechanisms.
- o Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- o One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- o Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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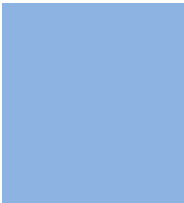


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References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring





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