SANGEET KHEMLANI

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POSITIONS

2018–	**Senior Cognitive Scientist**, Navy Center for Applied Research in Artificial Intelligence, NRL
2016–	**Principal Investigator**, Reasoning Lab @ NRL
2014–2018	**Cognitive Scientist**, Navy Center for Applied Research in Artificial Intelligence, NRL
2011–2014	**Postdoctoral Fellow**, Navy Center for Applied Research in Artificial Intelligence, NRL

EDUCATION

2011 — PhD in Cognitive Psychology
Department of Psychology
Princeton University, Princeton, NJ

2008 — MA in Cognitive Psychology
Department of Psychology
Princeton University, Princeton, NJ

2006 — BS in Psychology and Electronic Arts
School of Humanities, Arts, and Social Sciences
Rensselaer Polytechnic Institute, Troy, NY

HONORS & AWARDS

2015	"IngeniUS" early-career role model, Department of Defense
2014	Jerome and Isabella Karle Distinguished Scholar Fellowship, Naval Research Laboratory
2013	"Rising Star", Association for Psychological Science
2011	National Research Council Research Fellowship, National Academy of Sciences
2007	Graduate Research Fellowship, National Science Foundation
2006	Walker McKinney Life Sciences Fellowship, Princeton University

FUNDING

2023–2025 — Computing static and dynamic spatial relations from video
Naval Research Laboratory (Co-PI with A. Lovett)

2019–2022 — Automating human meta-epistemic inference
Naval Research Laboratory (Principal investigator)

2019–2021 — Establishing the critical tests for machine understanding for human-machine teaming
Office of the Secretary of Defense (Technical lead; PIs: L. Blaha, J.G. Trafton, R. St. Amant)

2016–2018 — Contextual modeling and spatiotemporal reasoning for autonomous systems
Office of Naval Research (Technical lead; PIs: D. Aha, J.G. Trafton)

2016–2018 — Causal inference in a computational model of human reasoning
Naval Research Laboratory (Principal investigator)

2013–2015 — Coherent and accurate status updates
Office of Naval Research (Technical lead; PI: J.G. Trafton)

2011–2014 — Explanatory reasoning in cognitive robotics and human-robot interaction
National Research Council (Principal investigator)

2023 Albertella, L., ..., **Khemlani, S.**, ... & Yucel, M. (2023). Building a transdisciplinary expert consensus on the cognitive drivers of performance under pressure: An international multi-panel Delphi study. Manuscript in press at *Frontiers in Psychology*.

Johnson-Laird, P.N. & **Khemlani, S.** (in press). What happened to the "new paradigm"? A commentary on Knauff and Gazzo Castañeda (2022). Manuscript in press at *Thinking & Reasoning*.

Kelly, L., & **Khemlani, S.** (in press). Iconicity bias and duration. Manuscript in press at *Journal of Experimental Psychology: Language, Memory, & Cognition*.

Kelly, L., & **Khemlani, S.** (in press). Temporal explanations. Manuscript in press at *Journal of Experimental Psychology: General*.

2022 Blaha, L., ..., **Khemlani, S.**, ... & Wong, R. (2022). Understanding is a process. *Frontiers in Systems Neuroscience*, 16, 800280.

Bucciarelli, M., Mackiewicz, R., **Khemlani, S.**, & Johnson-Laird, P.N. (2022). The causes of difficulty in children's creation of informal programs. *International Journal of Child-Computer Interaction*, 31, 100443.

Harner, H., & **Khemlani, S.** (2022). Reasoning about *want*. *Cognitive Science*, 46, e13170.

Johnson-Laird, P.N., Bucciarelli, M., Mackiewicz, R., & **Khemlani, S.** (2022). Recursion in algorithms, thought, and language. *Psychonomic Bulletin & Review*, 29, 430–454.

Khemlani, S., & Johnson-Laird, P.N. (2022). Reasoning about properties: A computational theory. *Psychological Review*, 129, 289-312.

2021 Henne, P., O'Neill, K., Bello, P., **Khemlani, S.**, & De Brigard, F. (2021). Norms affect prospective causal judgments. *Cognitive Science*, 45, 2103–2116.

Khemlani, S., Bello, P., Briggs, G., Harner, H., & Wasylyshyn, C. (2021). Much ado about nothing: The mental representation of omissive causation. *Frontiers in Psychology*, 11, 3854.

Trafton, J.G., Raymond, P., & **Khemlani, S.** (2021). The power of theory. *ACM Transactions on Human-Robot Interaction*, 10, 11.

2020 Kelly, L., **Khemlani, S.**, & Johnson-Laird, P.N. (2020). Reasoning about durations. *Journal of Cognitive Neuroscience*, 32, 2103–2116.

Khemlani, S. & Johnson-Laird, P.N. (2020). Causal conflicts produce domino effects. *Quarterly Journal of Experimental Psychology*, 73, 2317–2327.

Korman, J., & **Khemlani, S.** (2020). Explanatory completeness. *Acta Psychologica*, 209, 103139.

Korman, J., & **Khemlani, S.** (2020). Teleological generics. *Cognition*, 200, 104157.

2019 Kelly, L., Prabhakar, J., & **Khemlani, S.** (2019). Updating and reasoning: Different processes, different models, different functions. *Behavioral and Brain Sciences*, 42, e258.

Khemlani, S., & Johnson-Laird, P. N. (2019). Why machines don't (yet) reason like people. *KI – Künstliche Intelligenz*, 33, 219–228.

2018 Bucciarelli, M., Mackiewicz, R., **Khemlani, S.**, & Johnson-Laird, P. N. (2018). Simulation in children's conscious recursive reasoning. *Memory & Cognition*, 46, 1302–1314.

Khemlani, S., Byrne, R.M.J., & Johnson-Laird, P.N. (2018). Facts and possibilities: A model-based theory of sentential reasoning. *Cognitive Science*, 42, 1887–1924.

Khemlani, S., Wasylyshyn, C., Briggs, G., & Bello, P. (2018). Mental models and omissive causation. *Memory & Cognition*, 46, 1344–1359.

2017 Hiatt, L., Narber, C., Bekele, E., **Khemlani, S.**, & Trafton, J. G. (2017). Human modeling for human-robot collaboration. *International Journal of Robotics Research*, 36, 580–596.

Khemlani, S., & Johnson-Laird, P.N. (2017). Illusions in reasoning. *Minds & Machines*, 27, 11–35.

2016 Bucciarelli, M., Mackiewicz, R., **Khemlani, S.**, & Johnson-Laird, P. N. (2016). Children's creation of algorithms: simulations and gestures. *Journal of Cognitive Psychology*, 28, 297-318.

2015 Johnson-Laird, P. N., **Khemlani, S.**, & Goodwin, G.P. (2015). Logic, probability, and human reasoning. *Trends in Cognitive Sciences*, 19, 201-214.

Johnson-Laird, P. N., **Khemlani, S.**, & Goodwin, G.P. (2015). Response to Baratgin et al.: Mental models integrate probability and deduction. *Trends in Cognitive Sciences*, 19, 548-549.

Khemlani, S., Harrison, A. M., & Trafton, J. G. (2015). Episodes, events, and models. *Frontiers in Human Neuroscience*, 9, 590, 1-13.

Khemlani, S., Lotstein, M., & Johnson-Laird, P. N. (2015). Naive probability: Model-based estimates of unique events. *Cognitive Science*, 39, 1216–1258.

Khemlani, S., Lotstein, M., Trafton, J.G., & Johnson-Laird, P. N. (2015). Immediate inferences from quantified assertions. *Quarterly Journal of Experimental Psychology*, 68, 2073–2096.

2014   **Khemlani, S.**, Barbey, A., & Johnson-Laird, P. N. (2014). Causal reasoning with mental models. *Frontiers in Human Neuroscience*, 8, 849, 1-15.

Khemlani, S., Orenes, I., & Johnson-Laird, P. N. (2014). The negation of conjunctions, conditionals, and disjunctions. *Acta Psychologica*, 151, 1-7.

Ragni, M., **Khemlani, S.**, & Johnson-Laird, P. N. (2014). The evaluation of the consistency of quantified assertions. *Memory & Cognition*, 42, 53-66.

Sussman, A., **Khemlani, S.**, & Oppenheimer, D. (2014). Latent scope bias in categorization. *Journal of Experimental Social Psychology*, 52, 1-8.

2013   **Khemlani, S.**, & Johnson-Laird, P. N. (2013). Cognitive changes from explanations. *Journal of Cognitive Psychology*, 25, 139-146.

Khemlani, S., & Johnson-Laird, P. N. (2013). The processes of inference. *Argument & Computation*, 4, 1-20.

Khemlani, S., Mackiewicz, R., Bucciarelli, M., & Johnson-Laird, P. N. (2013). Kinematic mental simulations in abduction and deduction. *Proceedings of the National Academy of Sciences*, 110, 16766-16771.

Prasada, S., **Khemlani, S.**, Leslie, S.-J., & Glucksberg, S. (2013). Conceptual distinctions amongst generics. *Cognition*, 126, 405-422.

Trafton, J. G., Hiatt, L.M., Harrison, A. M., Tamborello, F.P., II, **Khemlani, S.**, & Schultz, A.C. (2013). ACT-R/E: An embodied cognitive architecture for human-robot interaction. *Journal of Human Robot Interaction*, 2, 30-55.

2012   Hiatt, L.M., **Khemlani, S.**, & Trafton, J. G. (2012). An explanatory reasoning framework for embodied agents. *Biologically Inspired Cognitive Architectures*, 1, 23-31.

Khemlani, S. & Johnson-Laird, P. N. (2012). Hidden conflicts: Explanations make inconsistencies harder to detect. *Acta Psychologica*, 139, 486–491.

Khemlani, S., & Johnson-Laird, P. N. (2012). Theories of the syllogism: A meta-analysis. *Psychological Bulletin*, 138, 427-457.

Khemlani, S., Leslie, S.-J., & Glucksberg, S. (2012). Inferences about members of kinds: The generics hypothesis. *Language and Cognitive Processes*, 27, 887–900.

Khemlani, S., Lotstein, M., & Johnson-Laird, P. N. (2012). The probabilities of unique events. *PLOS ONE*, 7, e45975.

Khemlani, S., Orenes, I., & Johnson-Laird, P. N. (2012). Negation: A theory of its meaning, representation, and use. *Journal of Cognitive Psychology*, 24, 541–559.

2011   **Khemlani, S.**, & Johnson-Laird, P. N. (2011). The need to explain. *Quarterly Journal of Experimental Psychology*, 64, 2276–88.

Khemlani, S., & Oppenheimer, D. (2011). When one model casts doubt on another: A levels-of-analysis approach to causal discounting. *Psychological Bulletin*, 137, 195-210.

Khemlani, S., Sussman, A., & Oppenheimer, D. (2011). *Harry Potter* and the sorcerer's scope: Latent scope biases in explanatory reasoning. *Memory & Cognition*, 39, 527–535.

Leslie, S.-J., **Khemlani, S.**, & Glucksberg, S. (2011). Do all ducks lay eggs? The generic overgeneralization effect. *Journal of Memory and Language*, 65, 15–31.

2010   **Khemlani, S.**, & Goodwin, G. (2010). The function and representation of concepts. *Behavioral and Brain Sciences*, 33, 216-217.

Khemlani, S., Lee, N.Y.L., & Bucciarelli, M. (2010). Determinants of cognitive variability. *Behavioral and Brain Sciences*, 33, 37-38.

2009   **Khemlani, S.**, & Johnson-Laird, P. N. (2009). Disjunctive illusory inferences and how to eliminate them. *Memory & Cognition*, 37, 615–623.

2008   Bucciarelli, M., **Khemlani, S.**, & Johnson-Laird, P. N. (2008). The psychology of moral reasoning. *Judgment and Decision Making*, 3, 121–139.

Neth, H., **Khemlani, S.**, & Gray, W. (2008). Feedback design for the control of a dynamic multitasking system: Dissociating outcome feedback from control feedback. *Human Factors*, 50, 643–651.

REFEREED CONFERENCE PAPERS

2023   Bio, B., & **Khemlani, S.** (2023). Omniscience errors in mental state reasoning. In M. Goldwater, F. Anggoro, B. Hayes, and D. Ong (Eds.), *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Bio, B., & **Khemlani, S.** (2023). Reasoning with online and offline knowledge. In M. Goldwater, F. Anggoro, B. Hayes, and D. Ong (Eds.), *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., Orenes, I., Moreno-Ríos, S., & Espino, O. (2023). Conditionals conflict with their denials. In M. Goldwater, F. Anggoro, B. Hayes, and D. Ong (Eds.), *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2022   Harner, H., & **Khemlani, S.** (2022). Frequently produced semantic features reflect principled connections. In J. Culbertson, A. Perfors, H. Rabagliati, and V. Ramenzoni (Eds.), *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S. (2022). A computational cognitive model of temporal reasoning. In V. Vandekerckhove, T. Stewart, and D. Kellen (Eds.), *International Conference on Cognitive Modeling 2022*. Society for Mathematical Psychology.

Harner, H., & **Khemlani, S.** (2022). How children talk about their desires: A corpus study of 'want'. In J. Culbertson, A. Perfors, H. Rabagliati, and V. Ramenzoni (Eds.), *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2021   Briggs, G., Harner, H., & **Khemlani, S.** (2021). Preferences in the quantified description of visual groups. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Harner, H., & **Khemlani, S.** (2021). Desires can conflict with intentions; plans cannot. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Kelly, L., & **Khemlani, S.** (2021). Temporal explanations help resolve temporal conflicts. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society* (pp. 1292-1298). Austin, TX: Cognitive Science Society.

Khemlani, S. (2021). Epistemic verbs produce spatial models. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2020   Briggs, G., Harner, H., & **Khemlani, S.** (2020). Visual grouping and pragmatic constraints in the generation of quantified descriptions. In B. Armstrong, S. Denison, M. Mack, and Y. Xu (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Harner, H. & **Khemlani, S.** (2020). A theory of bouletic reasoning. In B. Armstrong, S. Denison, M. Mack, and Y. Xu (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Kelly, L. & **Khemlani, S.** (2020). Directional biases in durative inference. In B. Armstrong, S. Denison, M. Mack, and Y. Xu (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2019   Briggs, G., Harner, H., Wasylyshyn, C., Bello, P., & **Khemlani, S.** (2019). Neither the time nor the place: Omissive causes yield temporal inferences. In A. Lieto (Ed.), *Proceedings of the 7th International Workshop on Artificial Intelligence and Cognition*.

Briggs, G. & **Khemlani, S.** (2019). A cognitively plausible algorithm for causal inference. In T. Stewart (Ed.), *Proceedings of the 17th International Conference on Cognitive Modeling*.

Henne, P., Bello, P., **Khemlani, S.**, & De Brigard, F. (2019). Norms and the meaning of omissive enabling conditions. In A. Goel, C. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Kelly, L., & **Khemlani, S.** (2019). The consistency of durative relations. In A. Goel, C. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2018   Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Implementing a robust explanatory bias in a person re-identification network. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*. Salt Lake City, UT: IEEE.

Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Human-level explanatory biases for person re-identification. In M. de Graaf, B. Malle, A. Dragan, & T. Ziemke (Eds.), *Proceedings of the Workshop of Explainable Robotic Systems*. Chicago, IL: ACM.

Horne, Z., & **Khemlani, S.** (2018). Conceptual constraints on generating explanations. In C. Kalish, M. Rau, T. Rogers, & J. Zhu (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Korman, J., & **Khemlani, S.** (2018). How people detect incomplete explanations. In C. Kalish, M. Rau, T. Rogers, & J. Zhu (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Korman, J., & **Khemlani, S.** (2018). These boots are made for walking: Teleological generalizations from principled connections. In C. Kalish, M. Rau, T. Rogers, & J. Zhu (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Ragni, M., Riesterer, N., **Khemlani, S.**, & Johnson-Laird, P.N. (2018). Individuals become more logical without feedback. In C. Kalish, M. Rau, T. Rogers, & J. Zhu (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2017 Bello, P., Wasylyshyn, C., Briggs, G., & **Khemlani, S.** (2017). Contrasts in reasoning about omissions. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., Hinterecker, T., & Johnson-Laird, P.N. (2017). The provenance of modal inference. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Trafton, J.G., Zish, K., McCurry, M., Hiatt, L., & **Khemlani, S.** (2017). A cognitive model of social influence. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2016 **Khemlani, S.** (2016). Automating human inference. In U. Furbach and C. Shon (Eds.), *Proceedings of the 2nd IJCAI Workshop on Bridging the Gap between Human and Automated Reasoning* (pp. 1–4). CEUR Workshop Proceedings.

Khemlani, S., & Johnson-Laird, P. N. (2016). How people differ in syllogistic reasoning. In A. Papafragou, D. Grodner, D. Mirman, and J. Trueswell (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2015 Bello, P., & **Khemlani, S.** (2015). A model-based theory of omissive causation. In R. Dale, C. Jennings, P. Maglio, T. Matlock, D. Noelle, A. Warlaumont, & J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., Goodwin, G.P., & Johnson-Laird, P.N. (2015). Causal relations from kinematic simulations. In R. Dale, C. Jennings, P. Maglio, T. Matlock, D. Noelle, A. Warlaumont, & J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., & Johnson-Laird, P.N. (2015). Domino effects in causal contradictions. In R. Dale, C. Jennings, P. Maglio, T. Matlock, D. Noelle, A. Warlaumont, & J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2014 **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P. N. (2014). A mental model theory of set membership. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., & Trafton, J. G. (2014). Percentile analysis for goodness-of-fit comparisons of models to data. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

2013 **Khemlani, S.**, Gartenberg, D., Park, K.H., & Trafton, J.G. (2013). Uncertainty can increase explanatory credibility. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S. & Johnson-Laird, P. N. (2013). Mental simulation and the construction of informal algorithms. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., Trafton, J. G., & Johnson-Laird, P. N. (2013). Deduction as stochastic simulation. In R. West & T. Stewart (Eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*.

2012   **Khemlani, S.** & Moore, A. (2012). Evaluative feedback improves deductive reasoning. In N. Miyake, D. Peebles, & R. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., Orenes, I., & Johnson-Laird, P.N. (2012). Negating compound sentences. In N. Miyake, D. Peebles, & R. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., & Trafton, J. G. (2012). mReactr: A computational theory of deductive reasoning. In N. Miyake, D. Peebles, & R. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Khemlani, S., Trafton, J. G., Lotstein, M., & Johnson-Laird, P. N. (2012). A process model of immediate inferences. In N. Rußwinkel, U. Drewitz, & H. van Rijn (Eds.), *Proceedings of the 11th International Conference on Cognitive Modeling*. Berlin, Germany: University of Groningen.

2011   **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P. N. (2011). What makes intensional estimates of probabilities inconsistent? In L. Carlson, C. Hölscher, & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society* (pp. 1906-1911). Austin, TX: Cognitive Science Society.

2010   **Khemlani, S.** & Johnson-Laird, P.N. (2010). Explanations make inconsistencies harder to detect. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 2900-2905). Austin, TX: Cognitive Science Society.

Kunze, N., **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P.N. (2010). Illusions of consistency in quantified assertions. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 2028-2032). Austin, TX: Cognitive Science Society.

2009   Arkoudas, K., Bringsjord, S., & **Khemlani, S.** (2009). Qualitative spatial reasoning via 3-valued heterogeneous logic. In J.L.G. Dietz (Ed.), *Proceedings of the International Conference on Knowledge Engineering and Ontology Development 2009* (pp. 80-87). Porto, Portugal: IN-STICC Press.

Khemlani, S., Leslie, S.-J., & Glucksberg, S. (2009). Generics, prevalence, and default inferences. In N. Taatgen & H. van Rijn (Eds.), *Proceedings of the 31st Annual Conference of the Cognitive Science Society* (pp. 443-448). Austin, TX: Cognitive Science Society.

Leslie, S.-J., **Khemlani, S.**, Prasada, S., & Glucksberg, S. (2009). Conceptual and linguistic distinctions between singular and plural generics. In N. Taatgen & H. van Rijn (Eds.), *Proceedings of the 31st Annual Conference of the Cognitive Science Society* (pp. 479-484). Austin, TX: Cognitive Science Society.

2008   **Khemlani, S.** & Johnson-Laird, P.N. (2008). Illusory inferences with embedded disjunctions. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (pp. 2128-2133). Austin, TX: Cognitive Science Society.

Khemlani, S., Leslie, S.-J., & Glucksberg, S. (2008). Syllogistic reasoning with generic premises: The generic overgeneralization effect. In B.C. Love, K. McRae, & V.M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (pp. 619-624). Austin, TX: Cognitive Science Society.

2007   **Khemlani, S.**, Leslie, S.-J., Glucksberg, S., & Fernandez, P. R. (2007). Do ducks lay eggs? How people interpret generic assertions. In D. McNamara & J.G. Trafton (Eds.), *Proceedings of the 29th Annual Conference of the Cognitive Science Society* (pp. 395-400). Mahwah, NJ: Erlbaum.

2006   Neth, H., **Khemlani, S.**, Oppermann, B., & Gray, W. (2006). Juggling multiple tasks: A rational analysis of multitasking in a synthetic task environment. In *Proceedings of the 50th Annual Meeting of the Human Factors and Ergonomics Society*. Santa Monica, CA: Human Factors and Ergonomics Society.

BOOK CHAPTERS

in press Johnson-Laird, P. N., & **Khemlani, S.** (in press). Mental models and the algorithms of deduction. In R. Sun (Ed.), *Cambridge Handbook on Computational Cognitive Sciences*. Cambridge, UK: Cambridge University Press.

2021 **Khemlani, S.** (2021). Psychological theories of syllogistic reasoning. In M. Knauff and W. Spohn (Eds.), *Handbook of Rationality*. Cambridge, MA: MIT Press.

2018 **Khemlani, S.** (2018). Reasoning. In S. Thompson-Schill (Ed.), *Stevens' Handbook of Experimental Psychology and Cognitive Neuroscience*. Wiley & Sons.

2017 Johnson-Laird, P. N., Goodwin, G.P., & **Khemlani, S.** (2017). Mental models and reasoning. In V. Thompson and L. Ball (Eds.), *International Handbook of Thinking & Reasoning*. Routledge.

Johnson-Laird, P. N. & **Khemlani, S.** (2017). Mental models and causation. In M. Waldmann (Ed.), *Oxford Handbook of Causal Reasoning*. London, UK: Oxford University Press.

2013 Johnson-Laird, P. N., & **Khemlani, S.** (2013). Toward a unified theory of reasoning. In B. Ross (Ed.), *The Psychology of Learning and Motivation* (pp. 1-42). Cambridge, MA: Academic Press.

SOFTWARE

2019 **Khemlani, S.** (2019). nodus-ponens: A full-stack framework for running high-level reasoning and cognitive science experiments in Node.js (version 1.3.5). Retrieved from https://www.npmjs.com/package/nodus-ponens.

Khemlani, S., & Johnson-Laird, P.N. (2018). mReasoner: A unified computational implementation of mental model theory of thinking and reasoning (version 0.9.6525). Retrieved from http://mentalmodels.princeton.edu/models/mreasoner/.

INVITED TALKS

2022 **University of Granada**, *Centro de Mente, Cerebro y Comportamiento*

2021 **Claremont Graduate University**, *Applied Cognitive Science Talk Series*

2019 **Villanova University**, *Cognitive Science Program Colloquium Series*

2018 **Duke University**, *Center for Cognitive Neuroscience*

George Mason University, *Department of Psychology*

2017 **Harvard University**, *Department of Psychology*

2016 **Duke University**, *Center for Cognitive Neuroscience*

New York University, *NYU ConCats, Department of Psychology*

University of Quebec at Montreal, *Summer School in Cognitive Sciences*

2015 **New York University**, *NYU ConCats, Department of Psychology*

2014 **University of Edinburgh**, *Department of Psychology*

Oxford University, *St. Catherine's College*

Institute for Human and Machine Cognition, *Ocala Afternoon Lecture Series*

2013 **University of Freiburg**, *Center for Cognitive Science*

Washington University in St. Louis, *Philosophy-Neuroscience-Psychology Seminar*

2012 **Brown University**, *Department of Cognitive, Linguistic, and Psychological Sciences*

2011 **Naval Research Laboratory**, *Navy Center for Applied Research in Artificial Intelligence*

2010 **New York University**, *NYU ConCats, Department of Psychology*

RECENT CONFERENCE TALKS

2022 Harner, H., & **Khemlani, S.** (2022). Frequently produced semantic features reflect principled connections. Virtual talk presented at Cognitive Science Society (CogSci 2022).

Harner, H., & **Khemlani, S.** (2022). How children talk about their desires: A corpus study of *want*. Virtual talk presented at Cognitive Science Society (CogSci 2022).

Khemlani, S. (2022). Tracking spatial relations with mReasoner. Virtual talk presented at London Reasoning Workshop and at Human Behavioral XAI.

2021 **Khemlani, S.** (2021). Logic and possibility. Virtual talk presented at Logic Learning Conference 2021.

Korman, J., & **Khemlani, S.** (2021). What makes an explanation *incomplete*?. Virtual talk presented at Cognitive Science Society (CogSci 2021).

2020 Briggs, G., Harner, H., & **Khemlani, S.** (2020). Visual grouping and pragmatic constraints in the generation of quantified descriptions. Virtual talk presented (by Briggs and Harner) at Cognitive Science Society (CogSci 2020).

Khemlani, S. (2020). Leveraging conceptual constraints for interactive AI. Virtual talk presented at European Conference on Artificial Intelligence (ECAI 2020) and at Robots: Science and Systems (RSS 2020).

2019 Briggs, G., & **Khemlani, S.** (2019). A cognitively plausible algorithm for causal inference. Talk presented (by Briggs) at *International Conference on Cognitive Modeling*, Montreal, Canada.

Briggs, G., Harner, H., Wasylyshyn, C., Bello, P., & **Khemlani, S.** (2019). Neither the time nor the place: Omissive causes yield temporal inferences. Talk presented (by Harner) at *International Workshop on Artificial Intelligence and Cognition*, Manchester, UK.

Kelly, L., & **Khemlani, S.** (2019). The consistency of durative relations. Talk presented (by Kelly) at *London Reasoning Workshop*, London, UK.

Bhat, N., & **Khemlani, S.** (2019). The dynamic processing of perceptual models. Talk presented (by Khemlani) at London Reasoning Workshop, London, UK.

2018 Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Implementing a robust explanatory bias in a person re-identification network. Talk presented (by Bekele) at Computer Vision and Pattern Recognition (CVPR 2018), Salt Lake City, UT.

Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Human-level explanatory biases for person re-identification. Talk presented (by Bekele) at Human-Robotic Interaction (HRI 2018), Chicago, IL.

Byrne, R., Goodwin, G., Johnson-Laird, P.N., **Khemlani, S.**, Ragni, M., & Quelhas, C. (2018). What conditionals mean. Talk presented (by Johnson-Laird) at London Reasoning Workshop, London, UK.

Korman, J., & **Khemlani, S.** (2018). These boots are made for walking: Teleological generalizations from principled connections. Talk presented (by Korman) at Cognitive Science Society (CogSci 2018), Madison, WI.

2017 Horne, Z., & **Khemlani, S.** (2017). Principled connections underlie the inherence bias in explanatory reasoning. Talk presented (by Horne) at London Reasoning Workshop, London, UK.

Khemlani, S., Hinterecker, T., & Johnson-Laird, P.N. (2017). The provenance of modal inference. Talk presented at Advances in Cognitive Systems (ACS 2017), Troy, NY, and at Cognitive Science Society (CogSci 2017), London, UK.

Korman, J., & **Khemlani, S.** (2017). How people detect when an explanation is incomplete. Talk presented (by Korman) at London Reasoning Workshop, London, UK.

2016 **Khemlani, S.**, Harrison, A., & Trafton, J.G. (2016). An embodied architecture for thinking and reasoning about time. Talk presented at Cognitive Science Society (CogSci 2016), Philadelphia, PA.

Khemlani, S., & Johnson-Laird, P.N. (2016). How people differ in syllogistic reasoning. Talk presented at Cognitive Science Society (CogSci 2016), Philadelphia, PA; and at the Meeting in Memory of Vittorio Girotto, London, UK.

2015 **Khemlani, S.**, Goodwin, G., & Johnson-Laird, P.N. (2015). Causal relations form kinematic simulations. Talk presented at London Reasoning Workshop, London, UK and Cognitive Science Society (CogSci 2015), Pasadena, California.

2014 **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P.N. (2014). The conditional probabilities of unique events. Talk presented at London Reasoning Workshop, London, UK.

Khemlani, S., & Trafton, J.G (2014). Percentile analysis for goodness-of-fit comparisons of models to data. Talk presented at Cognitive Science Society (CogSci 2014), Quebec City, Canada.

2013 **Khemlani, S.**, Trafton, J.G., & Johnson-Laird, P.N. (2013). Deduction as stochastic simulation. Talk presented at London Reasoning Workshop, London, UK and International Conference on Cognitive Modeling (ICCM 2013), Ottawa, Canada.

MENTORING & ADVISING

Postdoctoral researchers   Now at:

2023-present	Maria Kon, NRC Postdoctoral Research Fellow (joint mentorship with A. Lovett)	–
2021-present	Branden Bio, NRC Postdoctoral Research Fellow	–
2018-2021	Laura Kelly, NRC Postdoctoral Research Fellow	–
2019-2021	Hillary Harner, NRC Postdoctoral Research Fellow	Altamira Corporation
2017-2018	Zachary Horne, NRC Postdoctoral Research Fellow	University of Edinburgh
2016-2018	Joanna Korman, NRC Postdoctoral Research Fellow	MITRE Corporation

High school students

2019	Neha Bhat, Science and Engineering Apprenticeship Program	Virginia Tech
2017, 2018	Nikhil Khosla, Science and Engineering Apprenticeship Program	University of Michigan

RECENT PROFESSIONAL ACTIVITIES

2023	Panel Member, NATO Systems Analysis and Studies Panel on Anticipatory Intelligence
2023	Organizer, Meeting in Honor of Phil Johnson-Laird
2022	Program committee, 44th Annual Conference of the Cognitive Science Society
2021	Organizer, ICT 2021 Symposia on Mental Models in Thinking and Reasoning
	Consultant, NRC Mentoring Guides for Research Advisers
2020	Panelist, NRC/ASEE Postdoctoral Research Publication Awa rd Directorate Panel
	Program committee, ECAI-20 Workshop on Computational Argumentation and Cognition
2019	Organizer, IJCAI-19 Workshop on Bridging the Gap between Human and Automated Reasoning
	Organizer, CogSci 2019 Workshop on Predicting Individual Human Reasoning
2018	Chair, NRC/ASEE Postdoctoral Research Publication Award Directorate Panel
	Organizer, FAIM Workshop on Bridging the Gap between Human and Automated Reasoning
2016-2018	Organizer, NCARAI Seminar Series
2016	Organizer, Meeting in Honor of Vittorio Girotto
	Organizer, CogSci 2016 Workshop on Interactive Spatiotemporal Cognition
2015	Organizer, EAPCogSci Symposium on High-Level Inference through Mental Simulation
	Program committee, 37th Annual Conference of the Cognitive Science Society
2014	Member abstracts co-chair, 36th Annual Conference of the Cognitive Science Society

EDITORIAL & REVIEW SERVICES

Editorial board membership (journals):

Cognitive Science
Journal of Cognitive Psychology
Thinking & Reasoning

Ad-hoc reviewer (conferences):

Architectures and Mechanisms for Language Processing
Cognitive Science Society
International Joint Conference on Artificial Intelligence

Ad-hoc reviewer (grants):

National Science Foundation   *European Research Council*
French National Research Agency   *Research Council KU Leuven*

Ad-hoc reviewer (journals):

ACM Transactions on Interactive Intelligent Systems
Acta Psychologica
Advances in Cognitive Psychology
Argument & Computation
Child Development
Cognition
Cognitive Research: Principles and Implications
Cognitive Science
Cognitive Psychology
Computational Brain & Behavior
Experimental Psychology
Frontiers in Human Neuroscience
Japanese Psychological Research
Journal of Cognitive Psychology
Journal of Cognitive Science
Journal of Experimental Psychology: General
Journal of Experimental Psychology: Language, Memory, and Cognition
Journal of Semantics
Journal of Memory & Language
Inquiry
Memory & Cognition
Paladyn: Journal of Behavioral Robotics
PLOS ONE
Proceedings of the National Academy of Sciences
Psychological Bulletin
Psychological Review
Psychonomic Bulletin & Review
Quarterly Journal of Experimental Psychology
Trends in Cognitive Sciences
Thinking & Reasoning
Sage OPEN
Synthese