芽|Sprouts Working Papers on Information Systems ISSN 1535-6078

Overview of the Technology Acceptance Model: Origins, Developments and Future Directions

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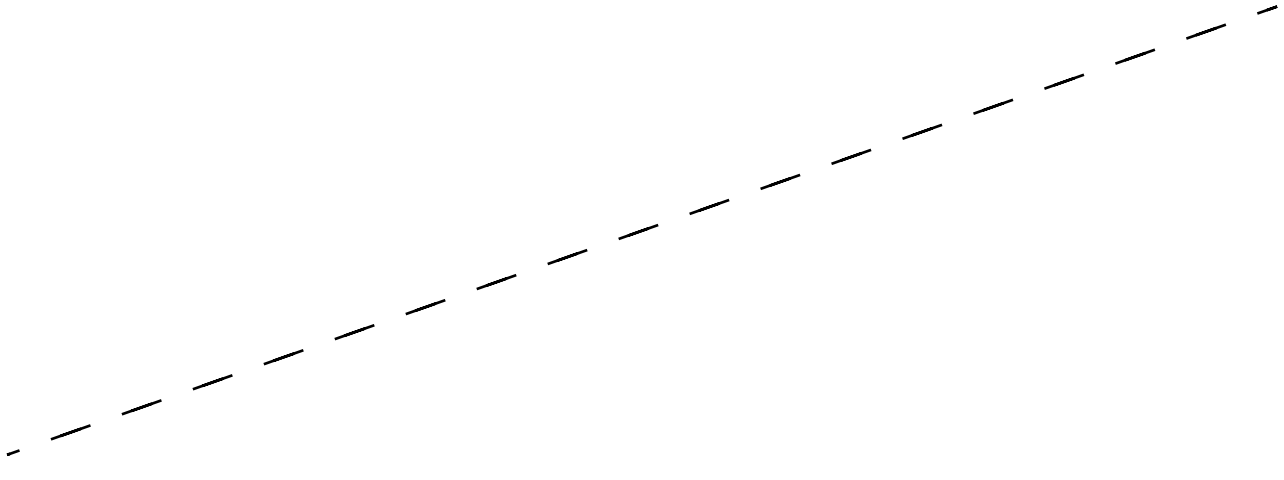
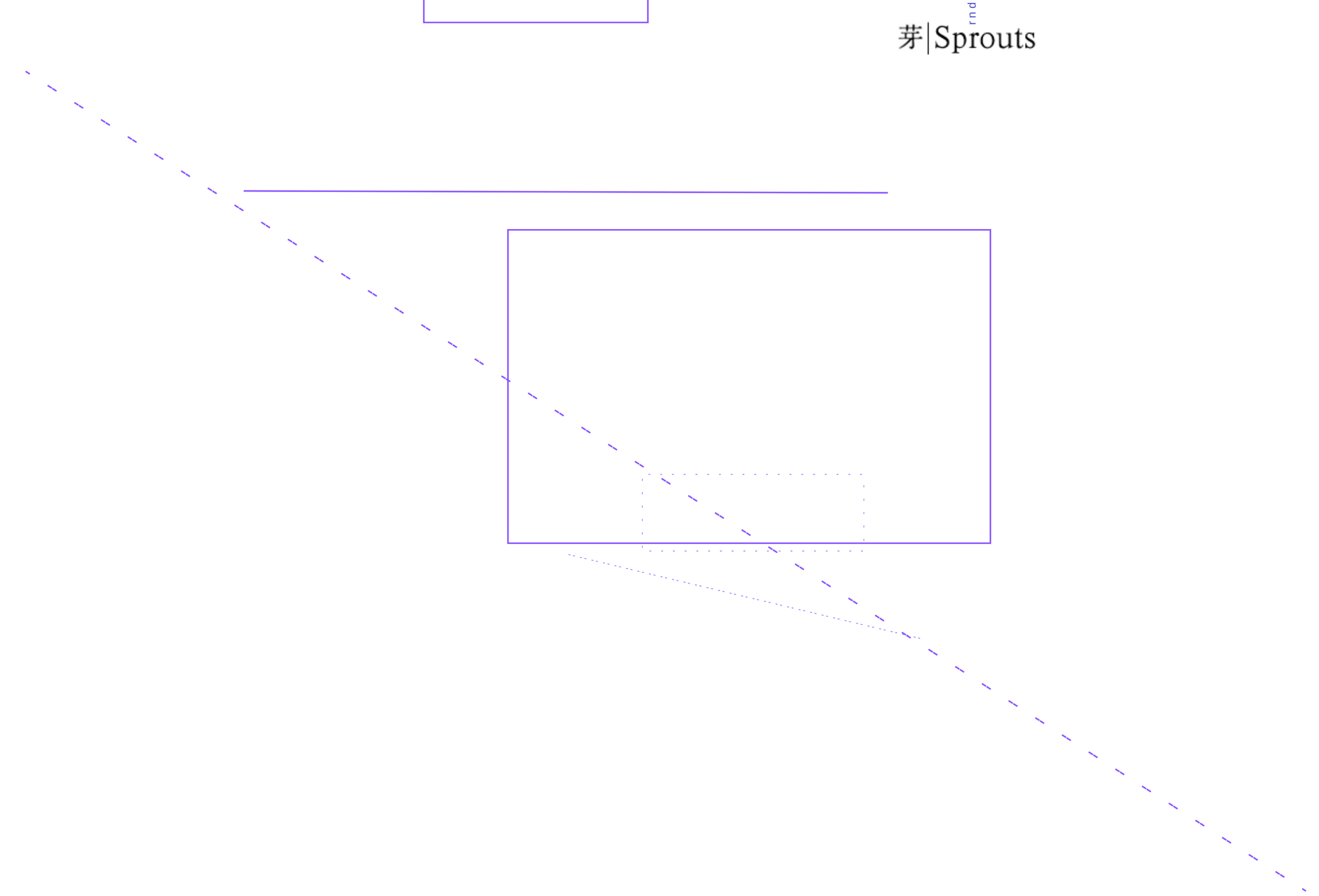
Abstract
User acceptance of technology has been an important field of study for over two decades now. Although many models have been proposed to explain and predict the use of a system, the Technology Acceptance Model has been the only one which has captured the most attention of the Information Systems community. Thus, it is essential for anyone willing to study user acceptance of technology to have an understanding of the Technology Acceptance Model. This paper provides a historical overview of the Technology Acceptance Model (TAM) by summarizing the evolution of TAM, its key applications, extensions, limitations, and criticisms from a selective list of published articles on the model. Current observations indicate that although TAM is a highly cited model, researchers share mixed opinions regarding its theoretical assumptions, and practical effectiveness. It is concluded that research in TAM lacks sufficient rigor and relevance that would make it a well established theory for the IS community.

Keywords: Technology Acceptance, Information System Deployment, TAM, Information System Theory.

Permanent URL: http://sprouts.aisnet.org/9-37

Reference: Chuttur M.Y. (2009). "Overview of the Technology Acceptance Model: Origins, Developments and Future Directions ," Indiana University, USA . *Sprouts: Working Papers on Information Systems*, 9(37). http://sprouts.aisnet.org/9-37

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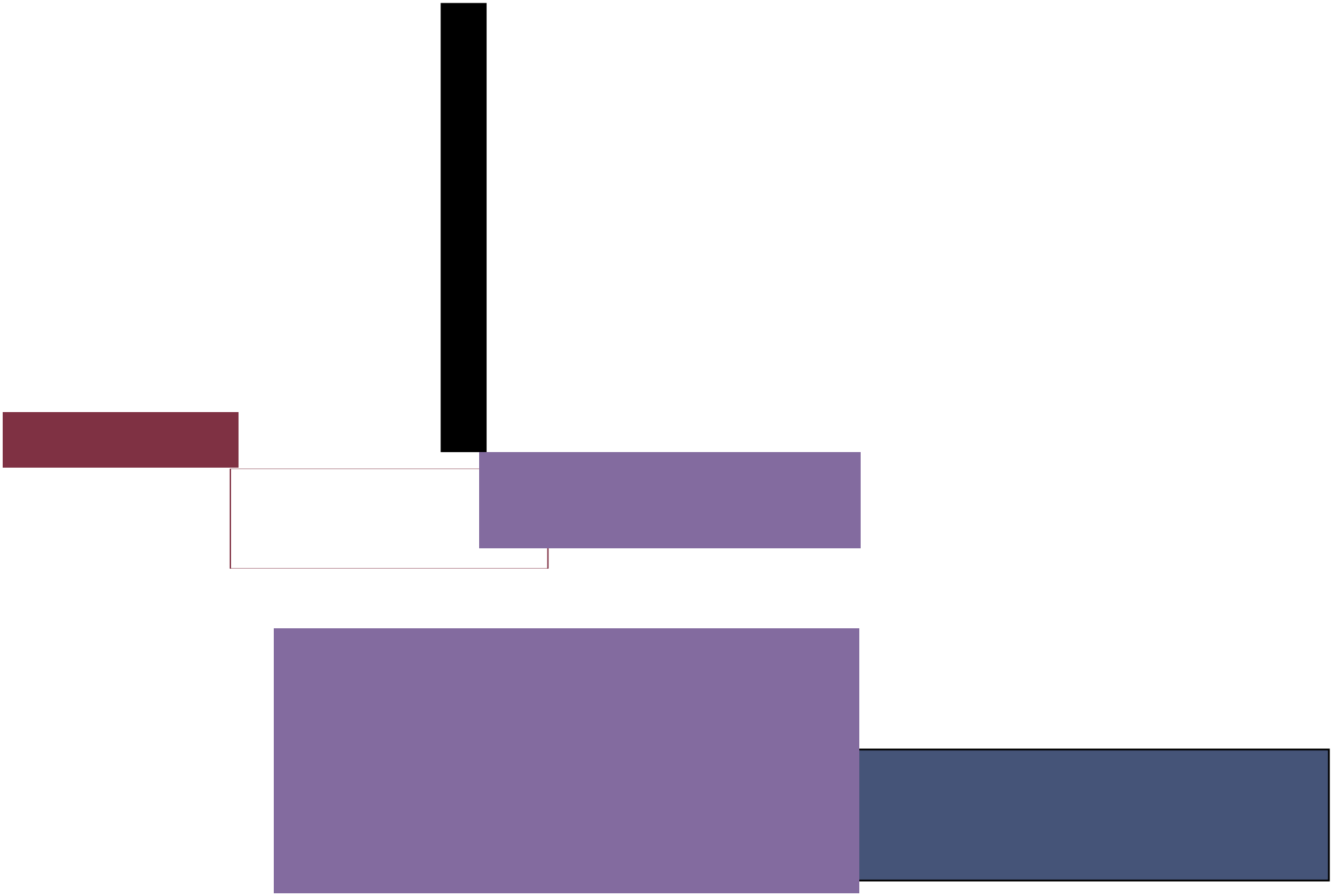

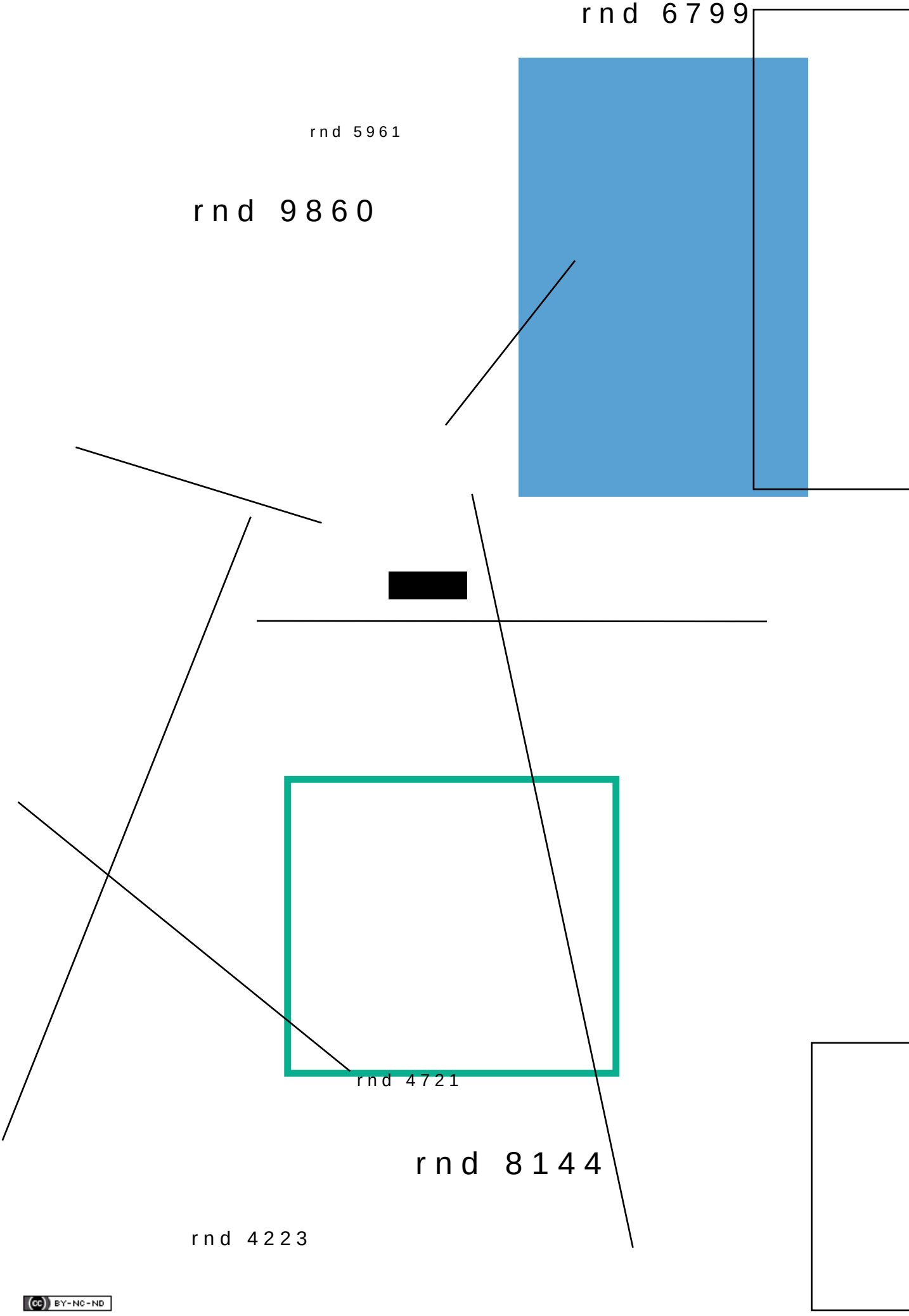

Table 2
Initial scale items for perceived ease of use (Davis, 1989, p. 324)

Item No.	Candidate item for measuring perceived ease of use
1	I often become confused when I use the electronic mail system.
2	I make errors frequently when using electronic mail.
3	Interacting with the electronic mail system is often frustrating.
4	I need to consul manual often when using electronic mail.
5	Interacting with ronic mail system requires a lot of my mental effort.
6	I find it easy to rom errors encountered while using electronic mail.
7	The electronic m is rigid and inflexible to interact with.
8	I find it easy to ctronic mail system to do what I want it to do.
	m often behaves in unexpected ways.
	se the electronic mail system.
	electronic mail system is easy for me to understand.
	nber how to perform tasks using the electronic mail
	8
	m provides helpful guidance in performing tasks.
	nic mail system easy to use.

The pretest phase assesse antic content of the items, and categorized them in clusters of similarities su tems that were free from ambiguity, and accurate enough to measure either ed ease of use or perceived usefulness were easily identified. Consequently, some items that did not cluster with other items were eliminated, and some of the existing remaining ones were rephrased to produce a ten item scale as shown in Tables 3 and 4.

Table 3
Revised 10 item scale for perceived usefulness (Davis, 1989, Table 3, p. 326)

Item No.	Candidate item for psychometric measures for perceived us
1	Using electronic mail improves the quality of the work I do.
2	Using electronic mail gives me greater control over my wor
3	Electronic mail enables me to accomplish tasks more quick
4	Electronic mail supports critical aspects of my job.
5	Using electronic mail increases my productivity.
6	Using electronic mail improves my job performance.
7	Using electronic mail allows me to accomplish more work t otherwise be possible.
8	Using electronic mail enhances my effectiveness on the job.
9	Using electronic mail makes it easier to do my job.
10	Overall, I find the electronic mail system useful in my job.

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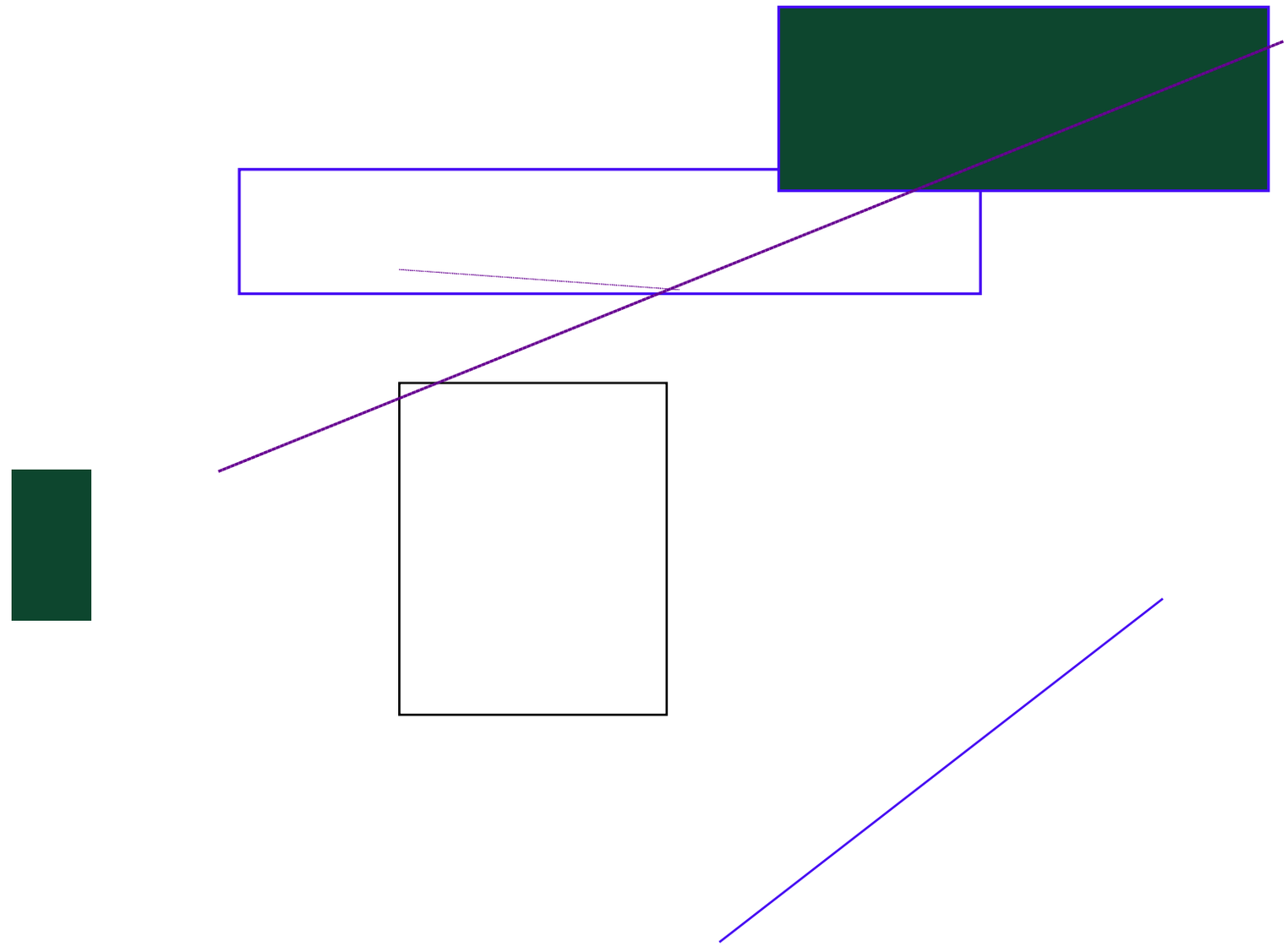

Assuming CHART-MASTER would be available on my job, I predict that I will use it on a regular basis in the future.

Participants had to respond to the above question by rating their predicted use of the system on two seven-point scales, one with likely-unlikely end-point adjectives, the other, with improbable-probable endpoint adjectives.

By analyzing the results obtained in his experiment, Davis (1985) found a positive correlation between the scales and self-predicted future usage. Furthermore, Davis used regression analysis to determine the relationships that existed in his TAM model. Along with the confirmation of his initial hypothesis, Davis would also discover other relationships that he had expected to be insignificant as shown in Figure 4.

Davis (1993) thus, suggested that in contrast to what he initially predicted, perceived usefulness could also have a direct influence on actual system use. At the same time, he found that system characteristics could directly influence the attitude of a person toward using the system, without the need for the person to form an actual belief about the system as shown in Figure 4.

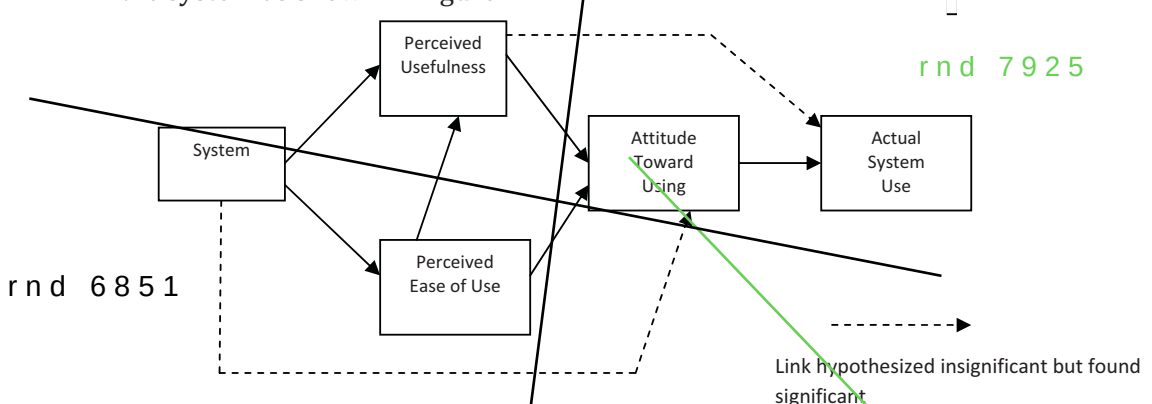

Figure 4: New relationship formulation in TAM (Davis, 1993, p. 481).

Consequently, several other studies followed in order to investigate in depth the relationships between the different variables in the TAM model.

TAM evolving

Later development of TAM would include behavioral intention as a new variable that would be directly influenced by the perceived usefulness of a system (Davis, Bagozzi and Warshaw, 1989). Davis et al. (1989) suggested that there would be cases when, given a system which was perceived useful, an individual might form a strong behavioral intention to use the system without forming any attitude, thus giving rise to a modified version of the TAM model as illustrated in Figure 5.

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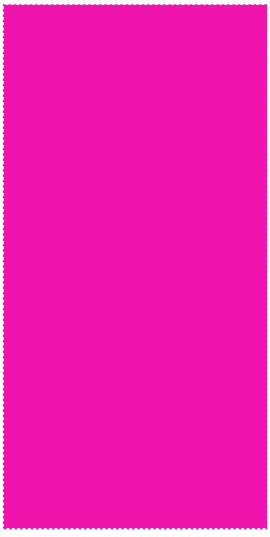

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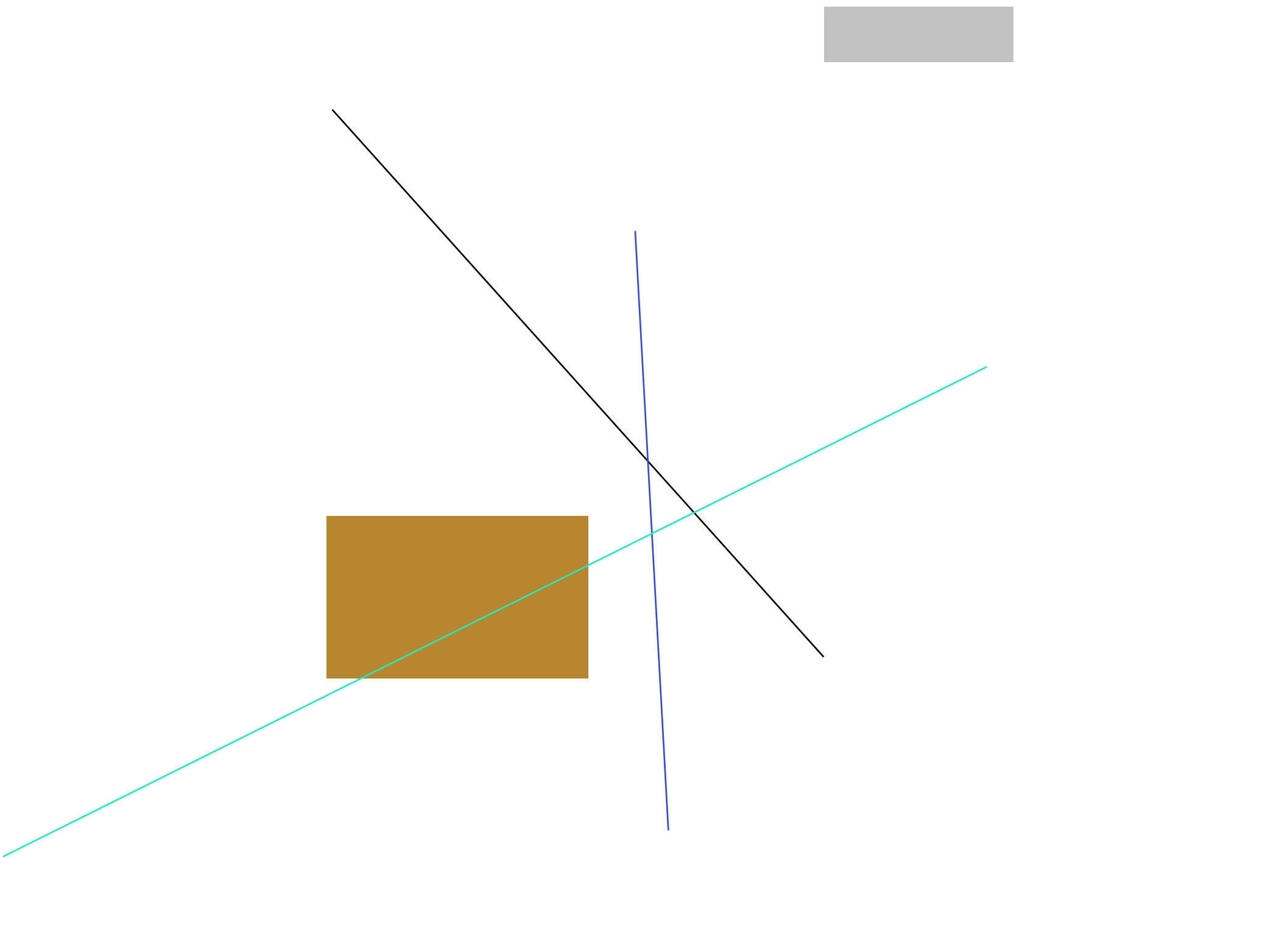

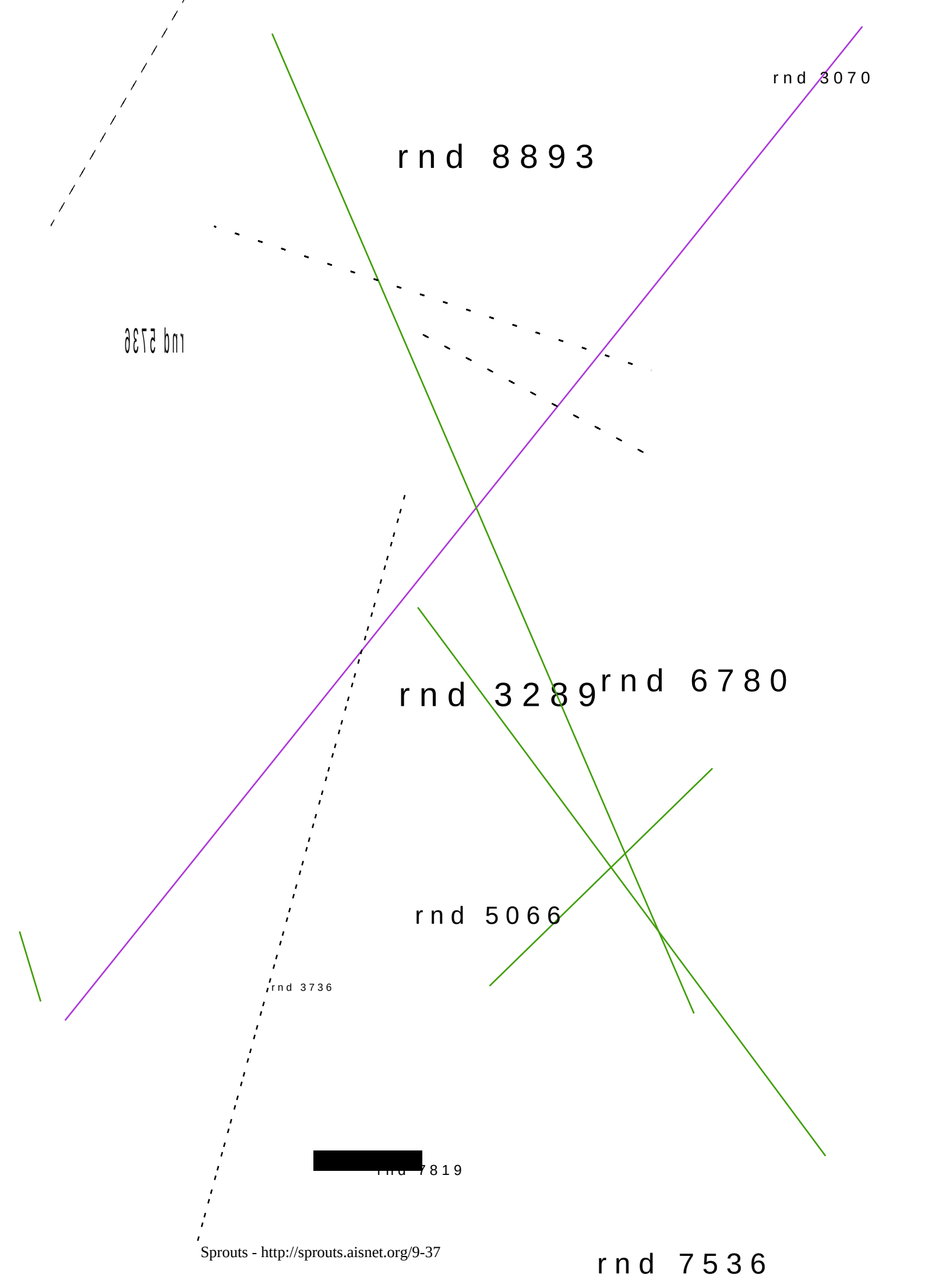
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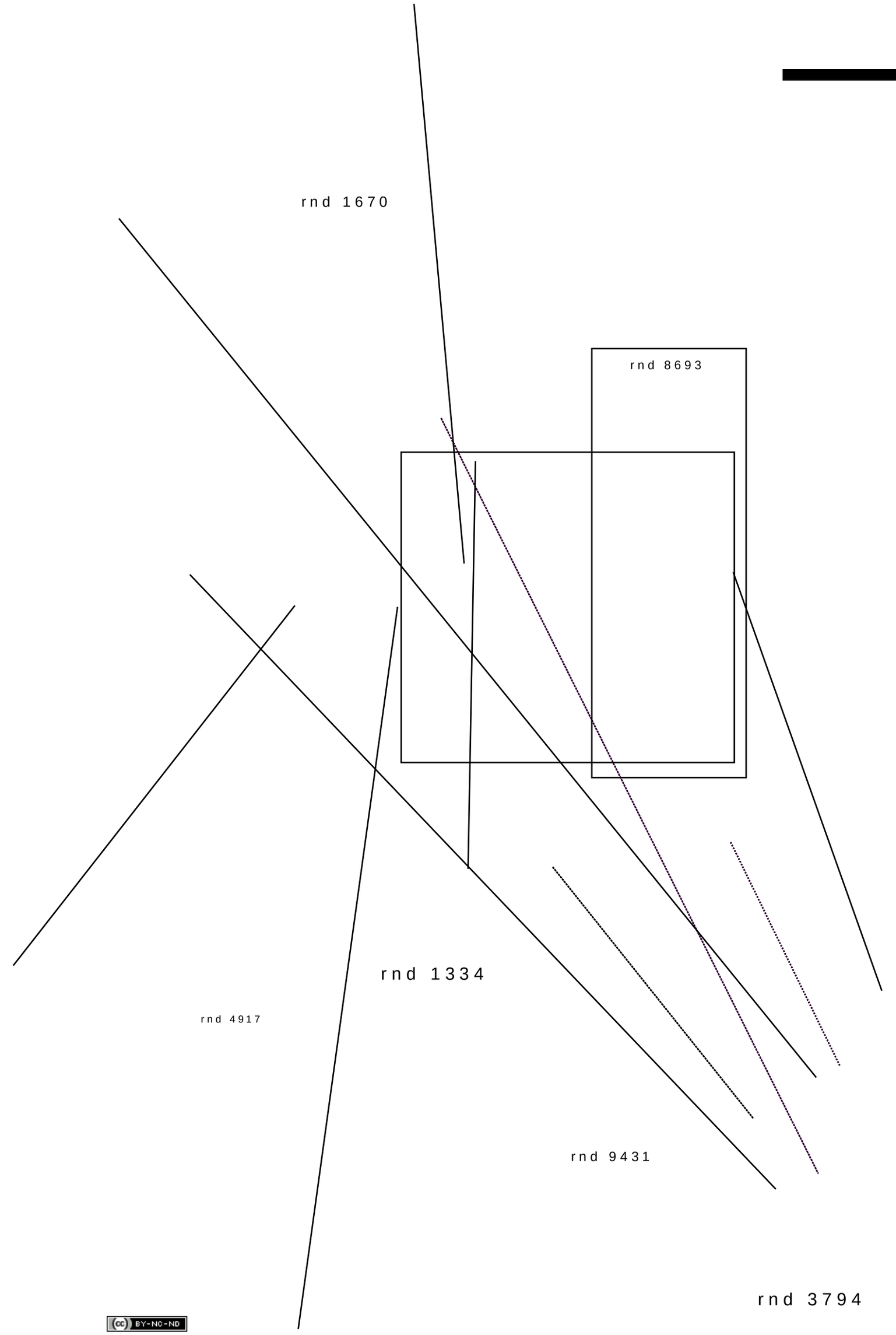

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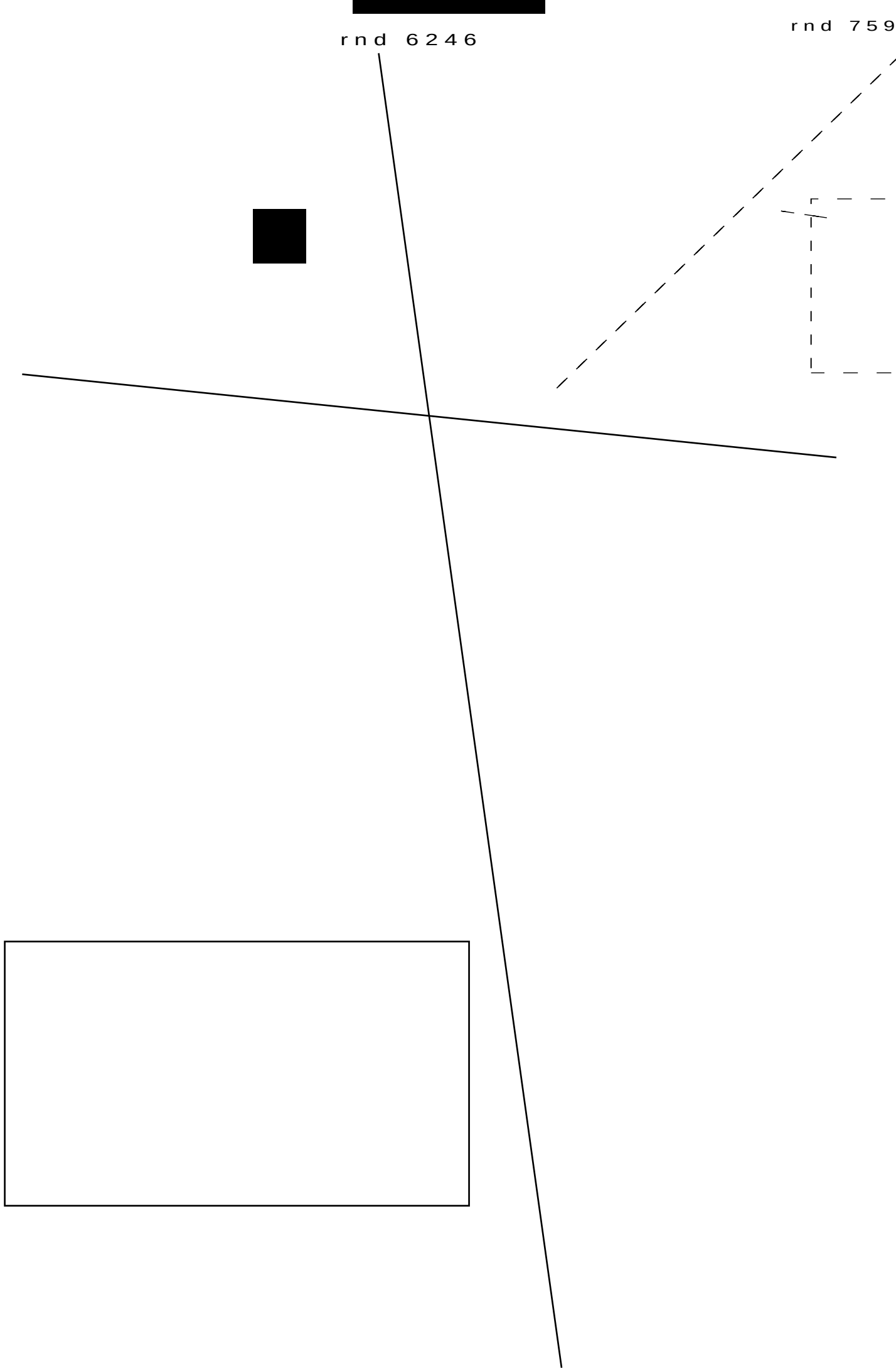
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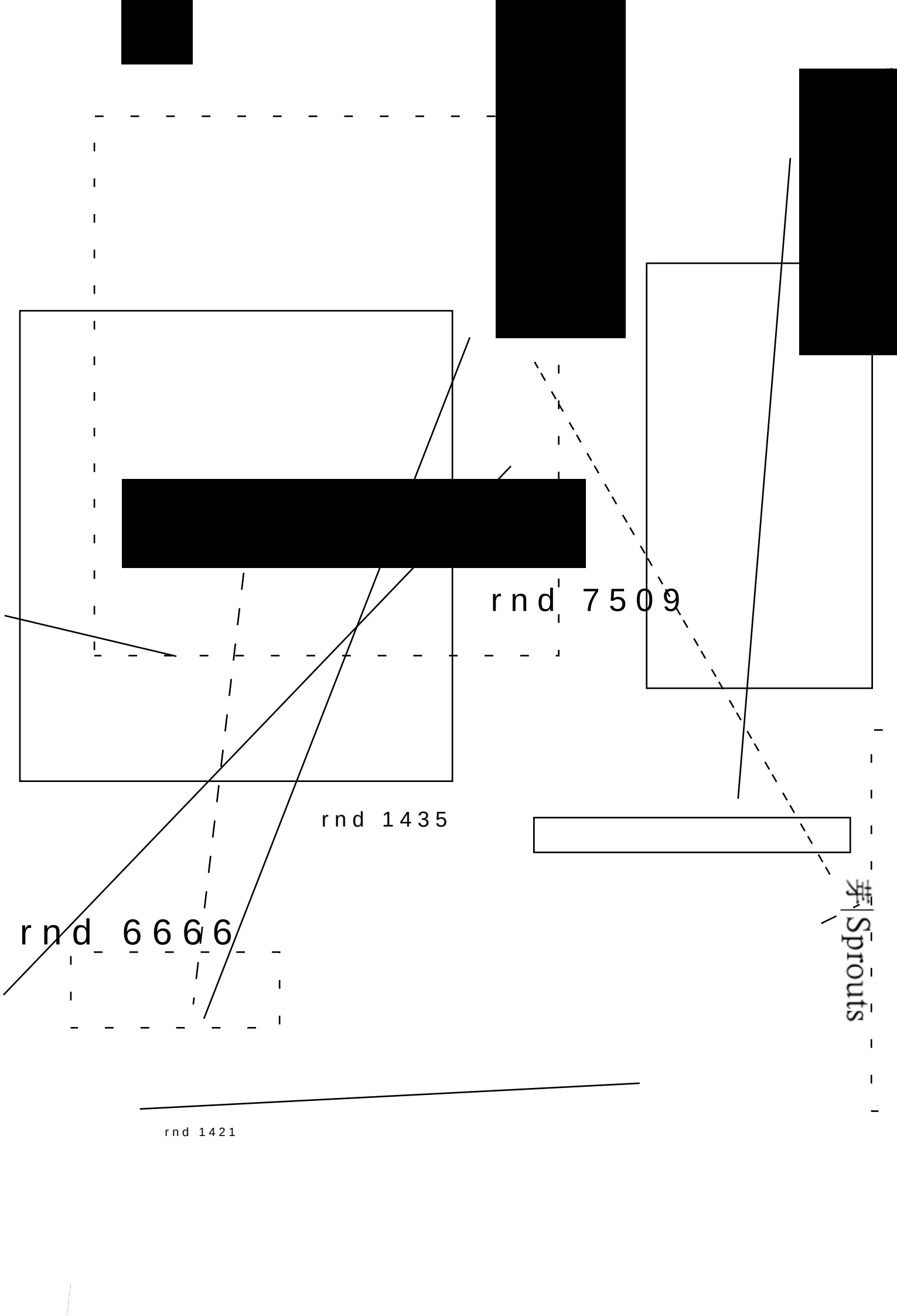
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rnd 1435
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rnd 1421
芽|Sprouts

Brown, S., Massey, A., Montoya-W urkman, J. (2002). Do I really have to?. *User acceptance of mandated tech pean Jr. of IS*, *11*, 283-95.

Burton-Jones, A., & Hubona, G. S. (mediation of external variables in the technology acceptance model, *Inf Management. 43* (6), 706–717.

Davis, F. (1985). A technology acc del for empirically testing new end-user information systems: theory and ublished Doctoral dissertation, MIT Sloan School of Management, Cambridg

Davis, F. (1989). Perceived useful ved ease of use, and user acceptance of information technology. *MIS Qua*), 319-40.

Davis, F. (1993). User acceptance technology: system characteristics, user perceptions. *Int. J. Man-Machine S*), 475-87.

, V. (1996). *A* essment of potential measurement biases eptance model: three experiments. *Int. J. Human-Computer Studies,*

., & Warshaw, P.R. (1989). User acceptance of computer ison of two theoretical models. *Management Science, 35* (8), 982-

& Warshaw, P. (1992). Extrinsic and intrinsic motivation to use kplace. *Journal of Applied Social Psychology, 22(*14), 1111-32.

rnd 6035

I. (1975). Belief, Attitude, Intention, and Behavior: An Introduction ch. Reading, MA: Addison-Wesley.

assey, P.D., & Cronan, T.P. (1993). On the test-retest reliability of and perceived ease of use scale. *MIS Quarterly, 17(*2), 227-30.

2006). A meta-analysis of the technology acceptance model, agement. 43 (6), 740–755

g, V. P. (1980). Perceived Usefulness of Information: A ation. *Decision Sciences, 11*(1), 121-134.

Larsen, K.R.T. (2003). The technology acceptance model: past, *Communications of the AIS, 12*(50), 752-80.

& Collerette, P. (2003). Why Do People Use Information

Technology Acceptance Model. *Information & Management* , *40*,

Lu, H-P. & Gustafson, D.H. (1994). An empirical study of perceived usefulness and perceived ease of use on computerized support system use over time. *International Journal of Information Management. 14*(5), 317-29.

rnd 2563

rnd 1287

rnd 9599

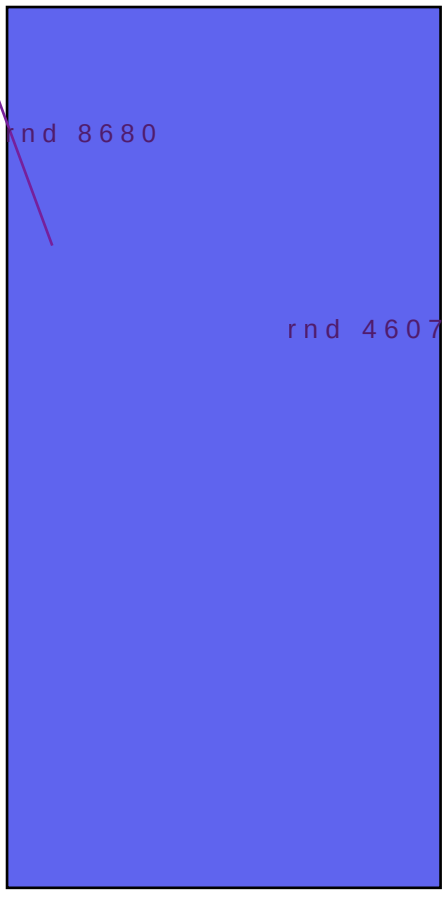
rnd 5557

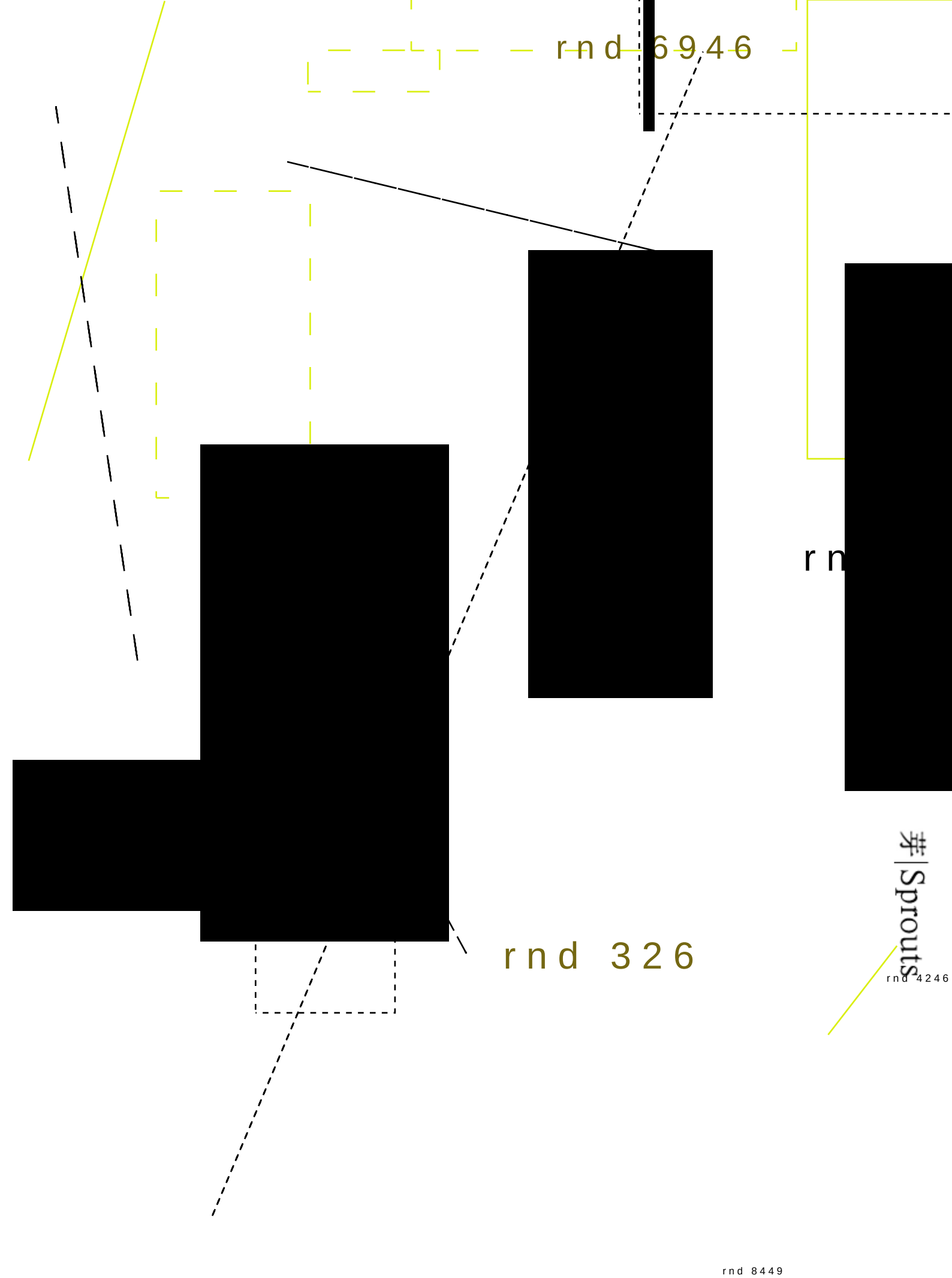
rnd 5888

rnd 9200

Yang , H. D., & Yoo, Y. (2003). It's All About Attitude: Revisiting t
Acceptance Model. *Decision Support Systems. 38*(1), 19–31

Yousafzai, S.Y., Foxall, G.R., and Pallister, J.G.(2007). Technology
analysis of the TAM: Part 1, *Journal of Modelling in Management*

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